F1 Model 812 Flexible Array Loudspeaker and F1 Subwoofer

Service Manual

Reference Number 731419-SM Rev. 03

Contents

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. Refer to the Hi-Pot and Ground Bond test information located on page 85 of this service manual.

The Hi-Pot test MUST be performed on any unit where the repair required removal of the amplifier's top cover.

The ground bond test MUST be performed on any unit where the repair affects the ground wire connection inside the chassis.

These tests MUST be performed to ensure that the product is safe to return to the customer after a repair.

CAUTION: The Bose® F1 Model 812 Flexible Array Loudspeaker and F1 Subwoofer contain no user-serviceable parts. To prevent warranty infractions, refer servicing to warranty service stations or factory service.

WARRANTY

The Bose F1 Model 812 Flexible Array Loudspeaker and F1 Subwoofer are covered by a limited 2 year warranty on electronics and a 5-year warranty on transducers.

Product Description

Overview

The Bose® F1 Model 812 flexible array loudspeaker is the first powered portable loudspeaker that lets you control its vertical coverage pattern. Simply push or pull the array into position to create “Straight,” “C,” “J” or “Reverse J” cover-age patterns. And once set, the system automatically changes the EQ to maintain optimum tonal balance for each coverage pattern. So whether you’re playing at floor level, on a stage, or facing raked seats or bleachers, you can now adapt your PA to the room.

Engineered with an array of eight high-output mid/high drivers, a high-powered 12" woofer and a lower crossover point, the loudspeaker delivers high SPL performance while maintaining vocal and midrange clarity that’s dramatically better than conventional loudspeakers.

The Bose F1 Subwoofer packs all the power of a larger bass box into a more compact design that’s easier to carry and fits in a car. A mounting stand for the loudspeaker is integrated right into the body of the subwoofer, so you always know where it is, making setup fast and easy. The stand even includes cable channels to neatly hide the wires.

The loudspeaker and subwoofer each have 1,000 watts of power, so you can fill nearly any venue with sound.

The loudspeaker and subwoofer feature strategically placed handles for easy transportation. They also feature highly durable enclosures to ensure easy transport and years of reliability. For the first time, the F1 Model 812 loudspeaker allows you to focus sound where it’s needed. So no matter where you perform, your PA has you covered.

Carton Contents

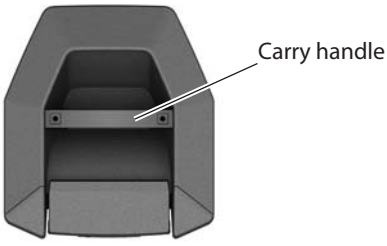
- Loudspeaker
- AC Line Cord
- Owner’s Guide (not shown)

F1 Model 812 Flexible Array Loudspeaker

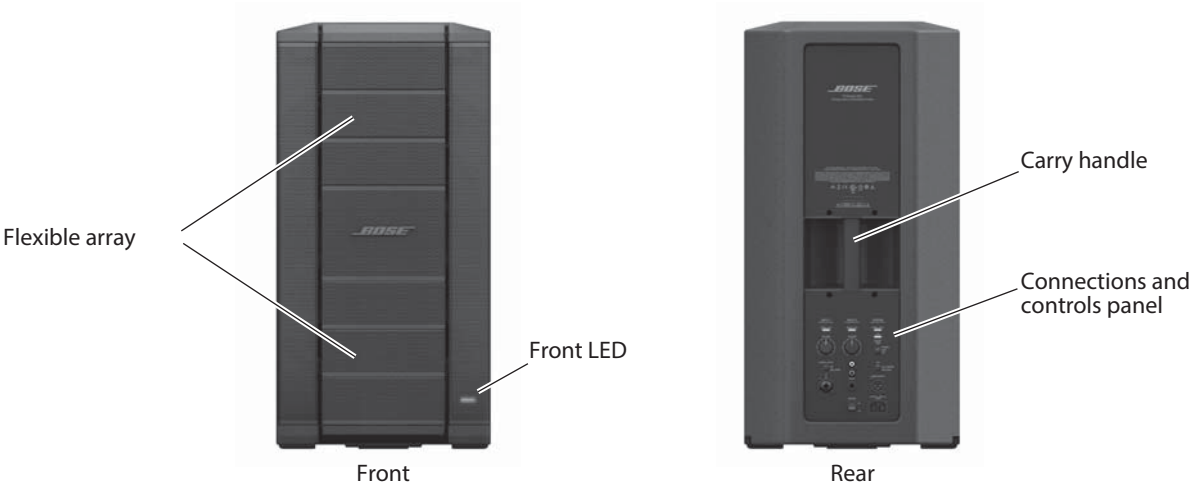
F1 Subwoofer

Product Description

F1 Model 812 Flexible Array Loudspeaker

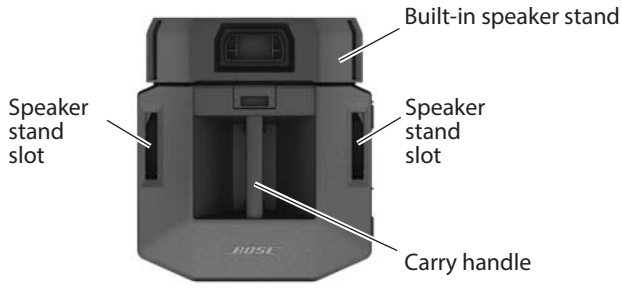


Top



Front Rear

F1 Subwoofer



Top

Front Rear

Product Description

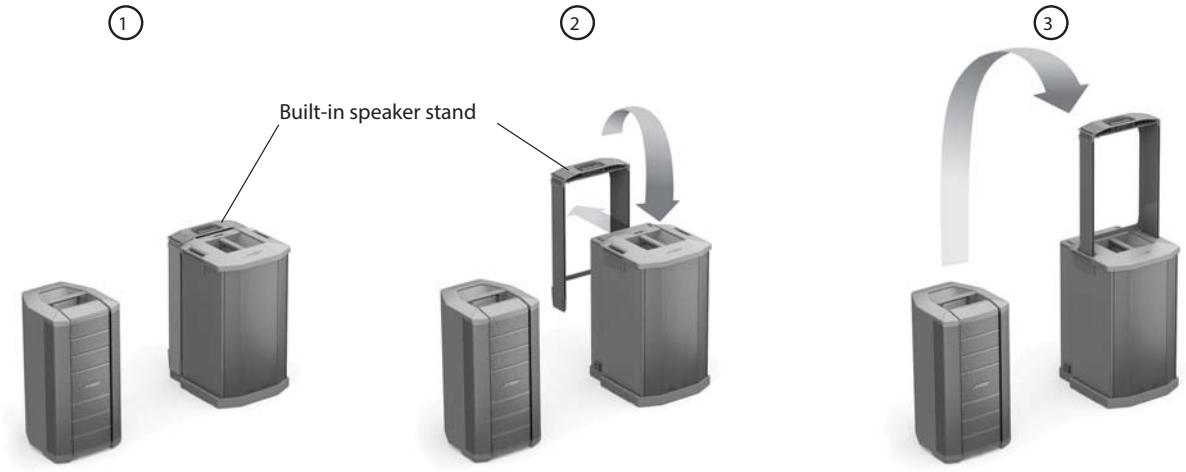
Setting Up the System

Using the F1 Model 812 with the F1 Subwoofer

The built-in loudspeaker stand is integrated into the rear of the subwoofer. Setting up the F1 Model 812 loudspeaker with the F1 subwoofer is a simple three-step process:

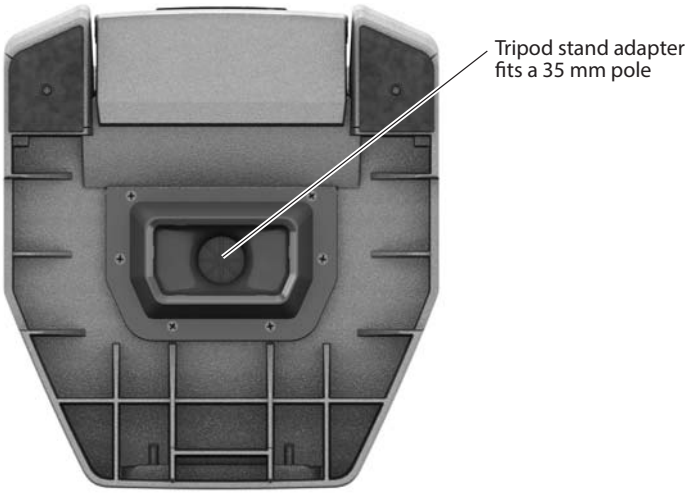
1. Locate the stand on the back of the F1 subwoofer.
2. Remove the stand and insert it into the F1 subwoofer.
3. Lift the F1 Model 812 loudspeaker and place it on the stand.

   The stand provides channels for cable management.



Using the F1 Model 812 on a Tripod Stand

The bottom of the F1 Model 812 loudspeaker includes an adapter for mounting the loudspeaker on a tripod speaker stand. The adapter fits a 35 mm pole.



Product Description

Using the Flexible Array

You can change the coverage pattern by changing the position of the top and bottom array.

Moving the array

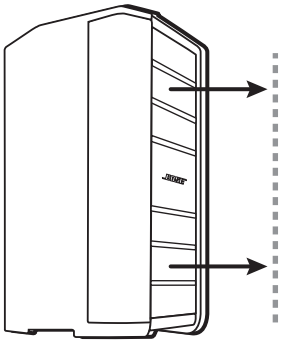
Pushing an array in

Pulling an array out

Four coverage patterns

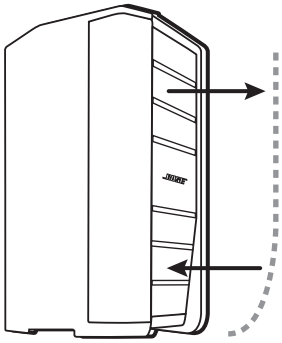
Straight array

Pull top and bottom array out



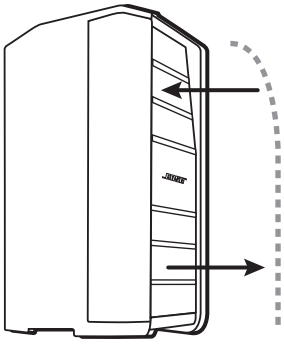
J array

Pull top array out, push bottom array in.



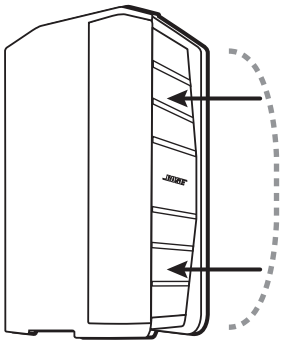
Reverse J array

Push top array in, pull bottom array out.



C array

Push top and bottom array in.

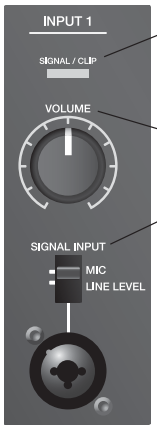


Product Description

F1 Model 812 Control Panel

POWER: AC power on/off

AC power input



SIGNAL/CLIP: Displays the input signal status in color.

- Green = signal present.
- Red = signal clipping.

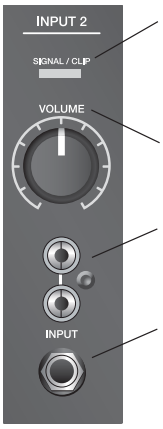
VOLUME: Adjusts channel volume.

SIGNAL INPUT:

Selector switch sets input sensitivity for input type.

Connector accepts XLR connector or ¼" phone plug.

- MIC selects sensitivity for mic inputs (dynamic or self-powered mics only) – use only when a mic is connected directly to the input.
- LINE selects sensitivity for line-level inputs, for example, from a mixer or DJ controller.



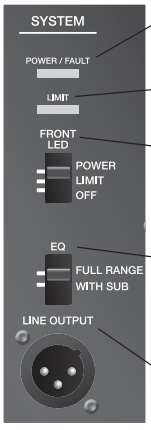
SIGNAL/CLIP: Displays the input signal status in color.

- Green = signal present.
- Red = signal clipping.

VOLUME: Adjusts channel volume.

RCA connectors : Analog stereo input for audio sources such as DVD players, VCR players, video game consoles, DJ mixers, keyboards and other instruments.

¼" phone connector : Provides analog input for guitars and other instruments. Accepts TRS balanced or TS unbalanced cables.



POWER/FAULT:

- Blue = power on.
- Red = fault condition.

LIMIT:

- Red = system limiting.

Front LED:

- POWER enables front LED to indicate power status.
- LIMIT engages a limiting display on the front LED.
- OFF turns off the front LED.

EQ:

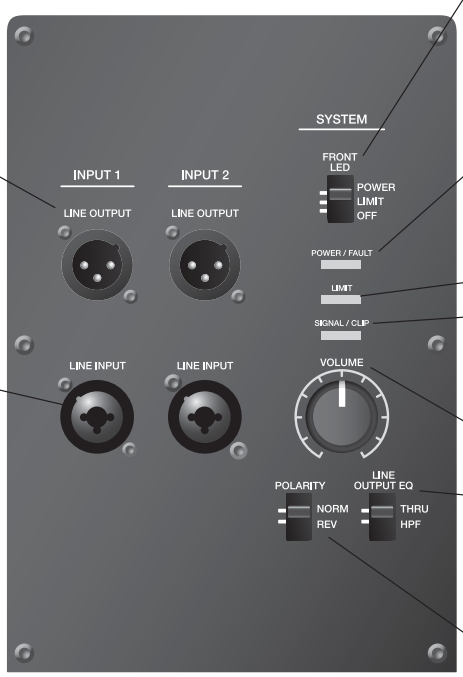
- FULL RANGE allows the loudspeaker to function without high-pass filtering.
- WITH SUB engages a high-pass filter when using the loudspeaker with the F1 subwoofer.

LINE OUTPUT:

- Balanced XLR line output provides a mix of input 1 and 2, post input faders. Can be used to daisy chain speakers together.

Product Description

F1 Subwoofer Control Panel



LINE OUTPUT 1 & 2: Individual outputs that provide balanced line output signals (pre-fader) that can be sent to powered loudspeakers or additional subwoofers.

Note : When the LINE OUTPUT EQ selector switch is set to THRU, the LINE OUTPUT signal will be full range.

LINE INPUT 1 & 2: Combination XLR – ¼" phone connector inputs that accept line level signals.

FRONT LED : selector switch:

- POWER enables LED to indicate power status.
- LIMIT enables LED to indicate limiting.
- OFF turns off LED.

POWER/FAULT : indicates power/fault status

- Blue = power on.
- Red = fault condition.

LIMIT: Red = system limiting.

SIGNAL/CLIP: Displays the input signal status in color.

- Green = signal present.
- Red = signal clipping.

VOLUME – Adjusts subwoofer volume.

LINE OUTPUT EQ:

- THRU passes input signal to the output with no filtering.
- HPF passes input through a high-pass filter.

POLARITY:

- NORM allows normal operation.
- REV causes bass phase cancellation when the F1 Model 812 loudspeaker is mounted on the supplied stand. May be used to better align the bass when the subwoofer is located further away from the F1 Model 812 loudspeaker.

AC input connector.

POWER on/off switch.

Product Description

Connecting Sources

Before plugging in a sound source, turn the VOLUME control of the channel fully counter clockwise.

The two independent inputs provide a combination of input connectors that can accomodate microphone and line-level inputs.

Note: Only dynamic or self-powered mics can be used for INPUT 1.

Setting Up INPUT 1 with a Microphone

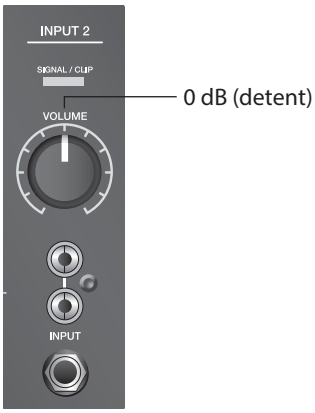
1. Turn the INPUT 1 VOLUME fully counter-clockwise.
2. Set the SIGNAL INPUT switch to MIC.
3. Plug the mic cable into the INPUT 1 connector.
4. Adjust the VOLUME to your desired level.

Setting Up INPUT 1 with a Source

1. Turn the INPUT 1 VOLUME fully counter-clockwise.
2. Set the SIGNAL INPUT switch to LINE LEVEL.
3. Plug the source cable into the INPUT 1 connector.
4. Adjust the VOLUME to your desired level.

Setting Up INPUT 2 with a Source

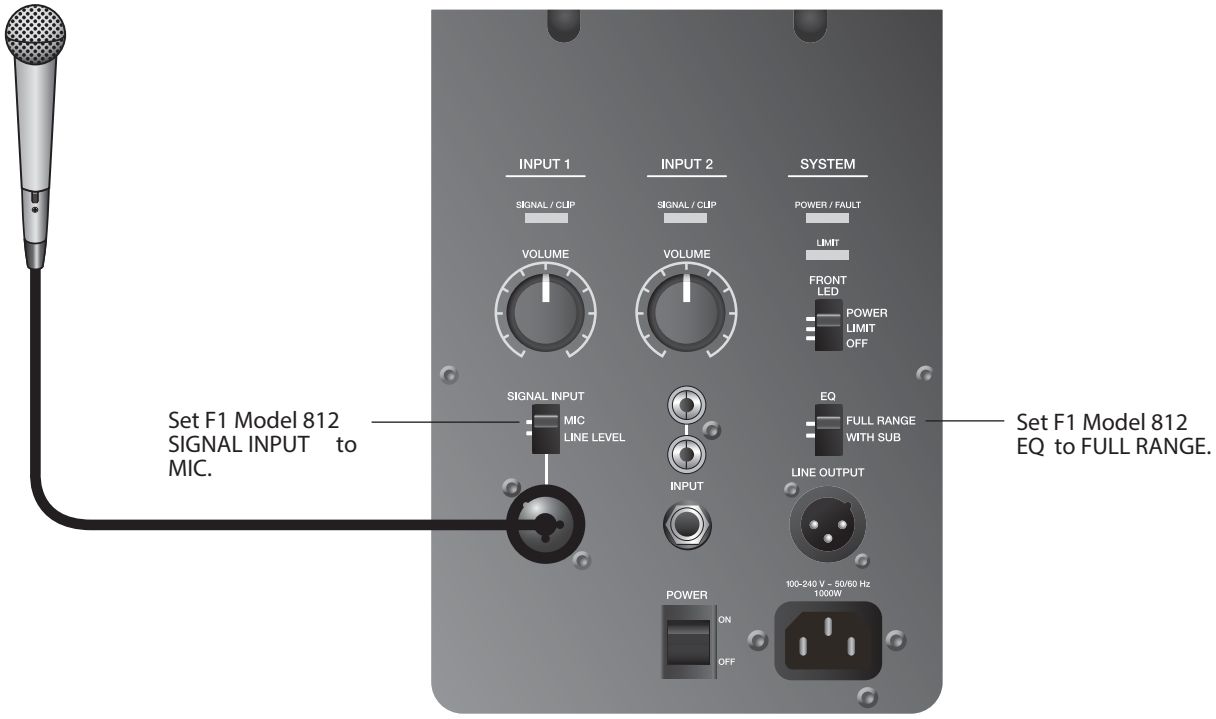
1. Turn the INPUT 2 VOLUME fully counter-clockwise.
2. Plug the source cable into an INPUT 2 connector.
3. Adjust the VOLUME to your desired level.



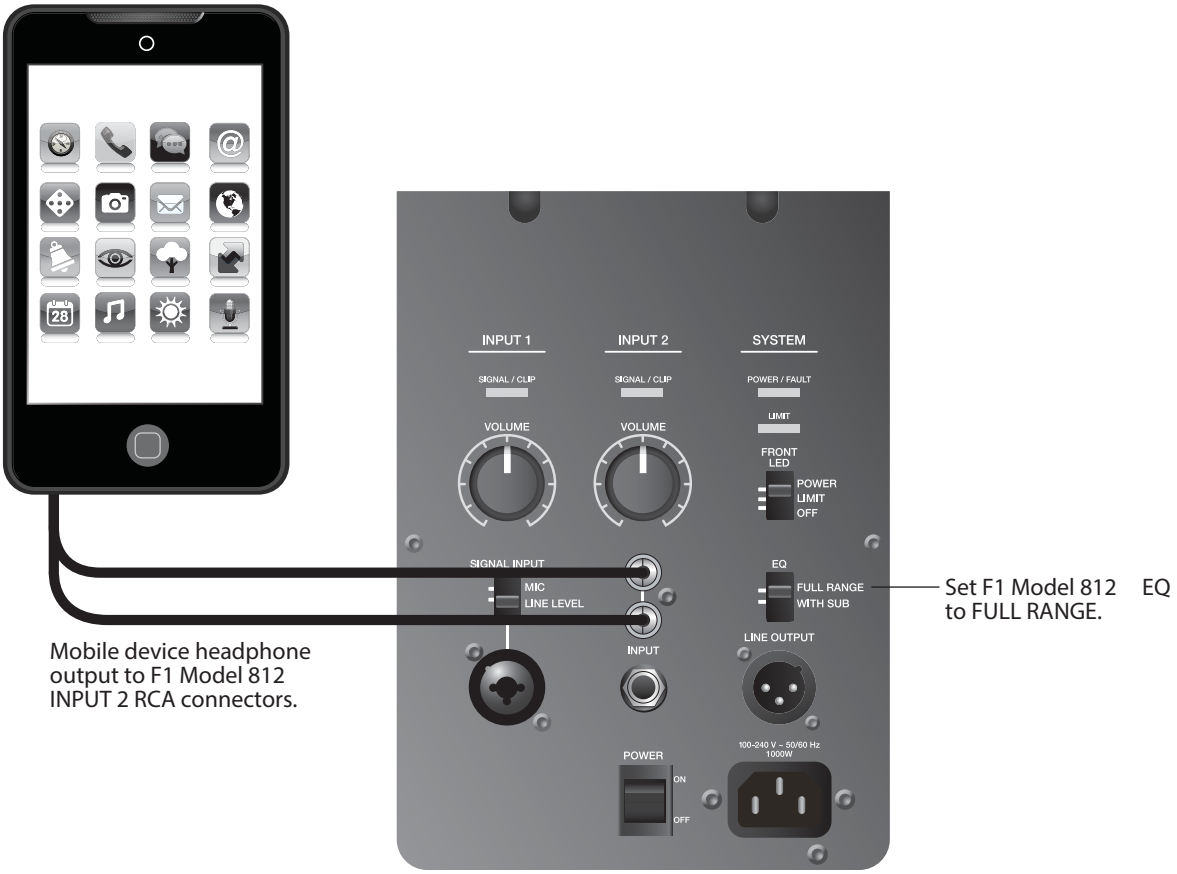
Product Description

Connection Modes

Mic to F1 model 812 loudspeaker INPUT 1



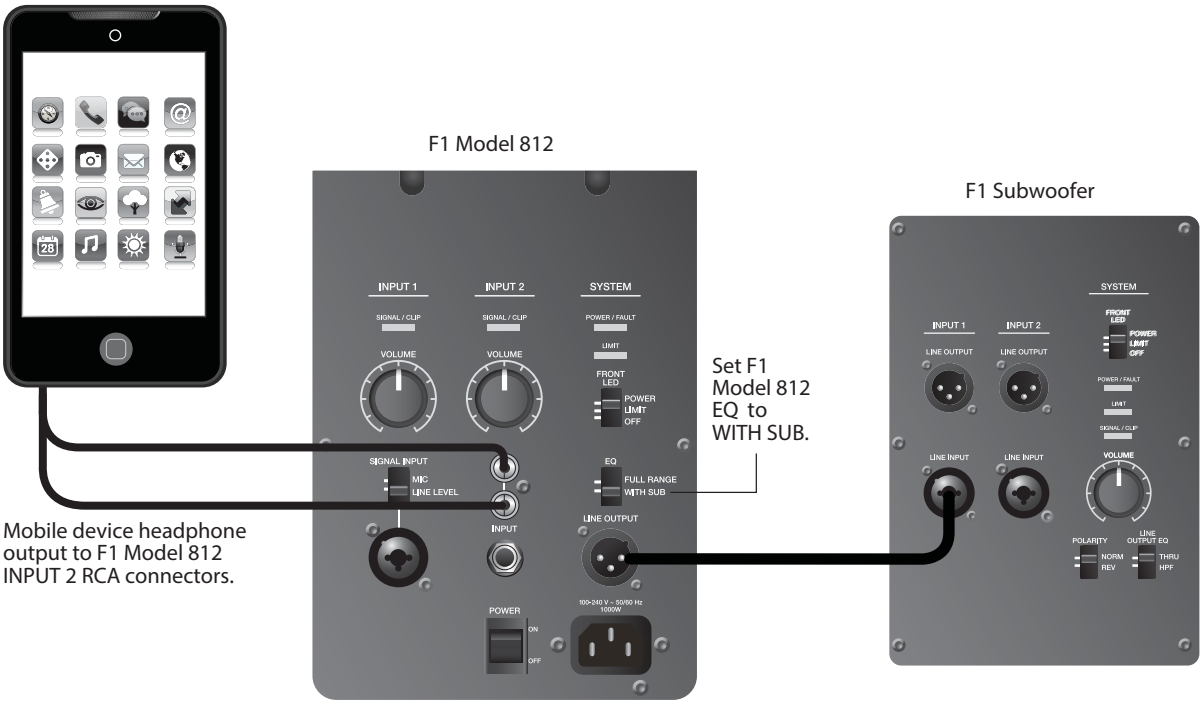
Mobile device to single F1 model 812 loudspeaker



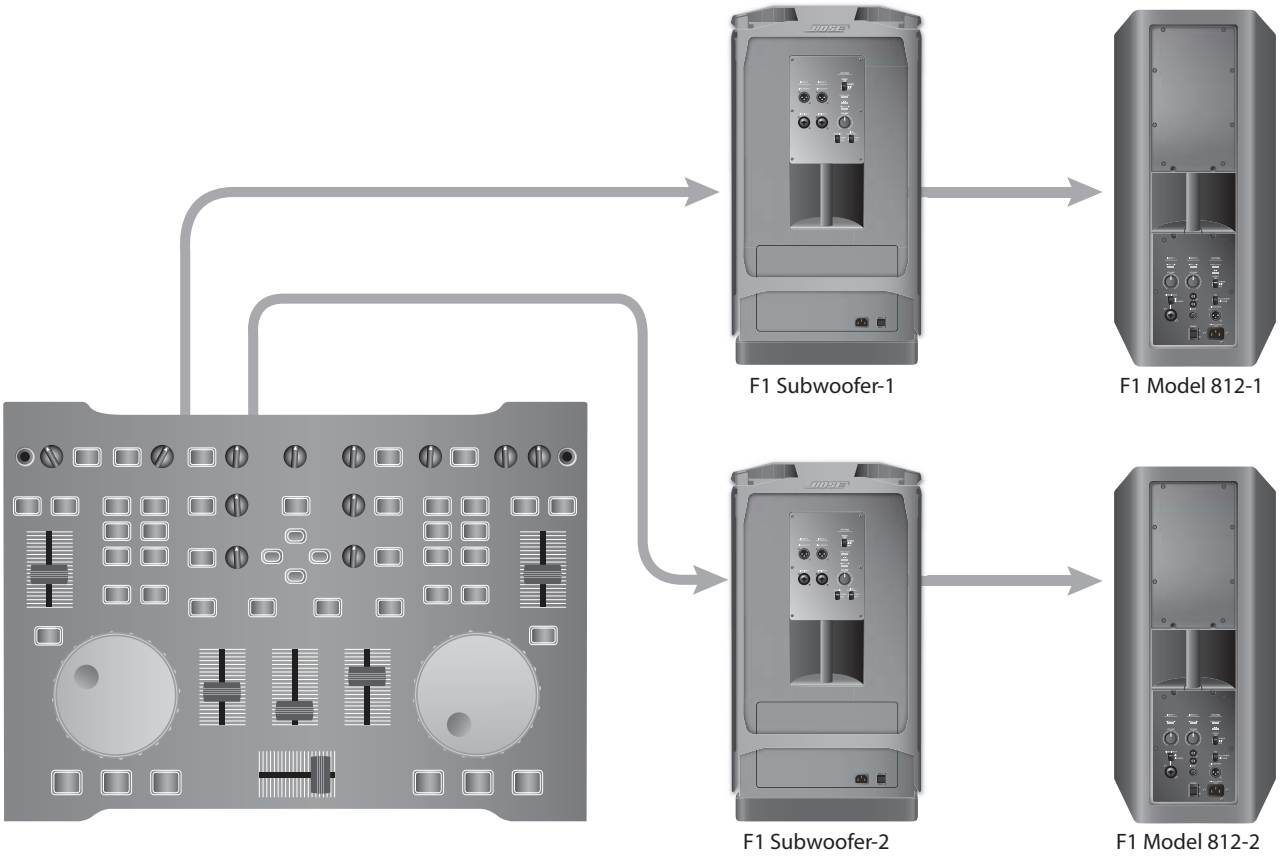
Product Description

Connection Modes (continued)

Mobile device to F1 model 812 loudspeaker and F1 subwoofer



DJ Console to two F1 Subwoofers and two F1 Model 812 loudspeakers



Specifications

F1 Model 812
Flexible Array Loudspeaker

Technical Specifications

System Performance		
System Type	Self powered, two-way	
Frequency Response (–3 dB)	52 Hz - 15.5 kHz	
Frequency Range (–10 dB)	43 Hz - 20 kHz	
Nominal Dispersion	100° H x 40° V (C-position)	
Maximum SPL @ 1 m	132 dB SPL (peak)	
Crossover Frequency	600 Hz Acoustic 4th order Butterworth	
Amplification		
System Power	1000 W	
Distortion at Rated Power	0.1 % Max (30 Hz - 15 kHz)	
System Limiter	Dynamic limiter	
Power Indicator	Blue LED: system on	
Transducers		
Driver Compliment	8 x 2.25" mid-high drivers; 1 x 12" LF	
Channels		
Signal Indicators	POWER/FAULT, LIMIT, FRONT LED, SIGNAL INPUT	
Input Connections	Channel 1: XLR Balanced: Pin 1 (GND), Pin 2 (+), Pin 3 (-)	Channel 2: 1/4" TS/TRS, 1⁄8" TS/TRS, (2) RCA
Controls	Volume level, Signal input select, Front LED function select, EQ select, Power on/off	
Additional Connections		
Line Output	XLR balanced	
AC Mains	IEC Connector	
Physical		
Enclosure	High impact composite materials	
Grille	Powder-coated perforated steel grille	
Dimensions	26.1" H x 13.1" W x 14.6" D (664.66 x 334.3 x 372.5mm)	
Net Weight	44.5 lbs (20.18 kg)	
Power Supply Voltages		
Universal	AC power rating: 100-240 V 50 / 60 Hz +/- 20 %, 200 W max	

Specifications

F1 Subwoofer

Technical Specifications

System Performance	
System Type	Self powered
Frequency Response (–3 dB)	40 Hz – 250 Hz
Frequency Range (–10 dB)	38 Hz – 250 Hz
Nominal Dispersion	Omni-directional
Maximum SPL @ 1 m	130 dB SPL (peak 6 dB CF)
Crossover Frequency	40 – 100 Hz Butterworth Bandpass, 100 Hz 4th order Butterworth HPF at Line Out
Amplification	
System Power	1000 W
Distortion at Rated Power	0.1 % Max (30 Hz - 15 kHz)
System Limiter	Dynamic limiter
Power Indicator	Blue LED: system on
Transducers	
Driver Compliment	2 x 10" high-excursion drivers
Channels	
	Channels 1/2
Signal Indicators	POWER/FAULT, LIMIT, FRONT LED, SIGNAL INPUT
Input Connections	2 XLR - 1/4" Combo
Controls	Volume level, Front LED function select, Power on/off, Polarity select, Line output EQ
Additional Connections	
Line Output	XLR balanced
AC Mains	IEC Connector
Physical	
Enclosure	Wood cabinet with high impact composite end caps
Grille	Powder-coated perforated steel grille
Dimensions	27” H x 16.1” W x 17.6” D (688 x 410.16 x 448.5mm)
Net Weight	55 lbs (24.9 kg)
Power Supply Voltages	
Universal	AC power rating: 100-240 V 50 / 60 Hz +/- 20 %, 200 W max

Specifications

Physical

	Dimensions	Weight
F1 Model 812 Loudspeaker	26.1" (665 mm) H x 13.1" (334 mm) W x 14.6" (373 mm) D	44.5 lb (20.2 Kg)
F1 Subwoofer	27.0" (688 mm) H x 16.1" (410 mm) W x 17.6" (449 mm) D	55.3 lb (24.9 Kg)
F1 system stack	73.5" (1868 mm) H x 16.1" (410 mm) W x 17.6" (449 mm) D	99.5 lb (45.7 Kg)

Electrical

	AC power rating	Peak inrush current
F1 Model 812 Loudspeaker	100–240V ∿ 2.3–1.2A 50/60Hz	120 V RMS: 6.3A RMS 23 VRMS: 4.6A RMS
F1 Subwoofer	100–240V ∿ 2.3–1.2A 50/60Hz	120 V RMS: 6.3A RMS 23 VRMS: 4.6A RMS

Audio Input/Output

F1 Model 812

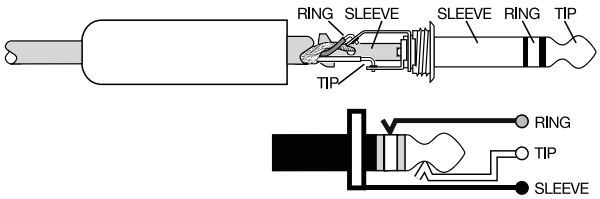
- INPUT 1, SIGNAL INPUT: Mic or line-level input channel for XLR connector or ¼" phone plug.
- INPUT 2, RCA input connectors: Line-level input channel for ¼" phone plug.
- SYSTEM, LINE OUTPUT: Balanced XLR line-level output, a mix of INPUT 1 and INPUT 2.

Subwoofer

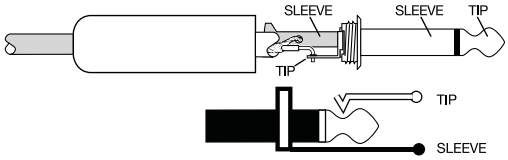
- LINE OUTPUT 1/2: Balanced XLR line-level output.
- LINE INPUT 1/2: Line-level input for XLR connector or ¼" phone plug.

Input/Output Connector Wiring

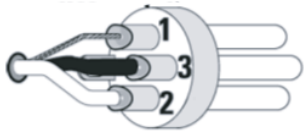
TRS balanced



TS unbalanced

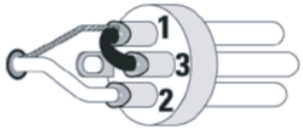


XLR balanced



1 – Shield (ground)
3 – Minus (–)
2 – Plus (+)

XLR unbalanced



1 – Shield (ground)
3 – Minus (–)
2 – Plus (+)

Accessories

Part Number	Description
751863-0010	F1 MODEL 812 TRAVEL BAG
751864-0010	F1 SUBWOOFER TRAVEL BAG
736451-0010	YOKE BRACKET
736453-0010	U BRACKET
738453-0110	PAN AND TILT BRACKET, BLACK

ELECTROSTATIC DISCHARGE SENSITIVE (ESDS) DEVICE HANDLING

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

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

PART LIST NOTES

1. 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.

Manufactured Versions

Material Master Number	Description
	F1 Model 812 Flexible Array Loudspeaker
731419-0110	F1 MODEL 812 FLEX ARRAY LDSPKR NO POWER CORD
731419-1110	F1 MODEL 812 FLEX ARRAY LDSPKR 120V US
731419-2110	F1 MODEL 812 FLEX ARRAY LDSPKR 230V EU
731419-3110	F1 MODEL 812 FLEX ARRAY LDSPKR 100V JP
731419-4110	F1 MODEL 812 FLEX ARRAY LDSPKR 230V UK
731419-5110	F1 MODEL 812 FLEX ARRAY LDSPKR 220V AU
	F1 Subwoofer
731444-0110	F1 SUBWOOFER POWERED NO POWER CORD
731444-1110	F1 SUBWOOFER POWERED 120V US
731444-2110	F1 SUBWOOFER POWERED 230V EU
731444-3110	F1 SUBWOOFER POWERED 100V JP
731444-4110	F1 SUBWOOFER POWERED 230V UK
731444-5110	F1 SUBWOOFER POWERED 230V AU

PACKAGING PART LIST

F1 Model 812 Flexible Array Loudspeaker

Item Number	Description	Part Number	Qty.	Note
1	PE BAG, F1, SVCE	744265-001S	1	
2	ENDCAP, CARTON, MH, SVCE (FIRST QUALITY)	744264-001S	2	
3	CARTON, MH, SVCE	625285-001S	1	
-	GUIDE, OWNERS, F1 SPKR & F1 SUBWFR (3 LANG.) GUIDE, OWNERS, F1 SPKR & F1 SUBWFR (8 LANG.) GUIDE, OWNERS, F1 SPKR & F1 SUBWFR (JP)	740644-0010 740743-0010 762081-001S	1 1 1	
-	AU/NZ WARR SLIP SHEET 8.5 X 5.5	355731-0010	1	
-	AC LINE CORD, 120V, 3P, DET, US/CA, ROHS 1.3 AC LINE CORD, 230V, 3P, DET, EU, ROHS 1.4 AC LINE CORD, 100V, 3P, DET, JPN, ROHS 1.2 AC LINE CORD, 240V, 3P, DET, UK, ROHS 1.2 AC LINE CORD, 240V, 3P, DET, AUS, ROHS 1.4	350745-0010 350747-0010 350749-0010 350748-0010 350746-0010	1 1 1 1 1	3 ⚠

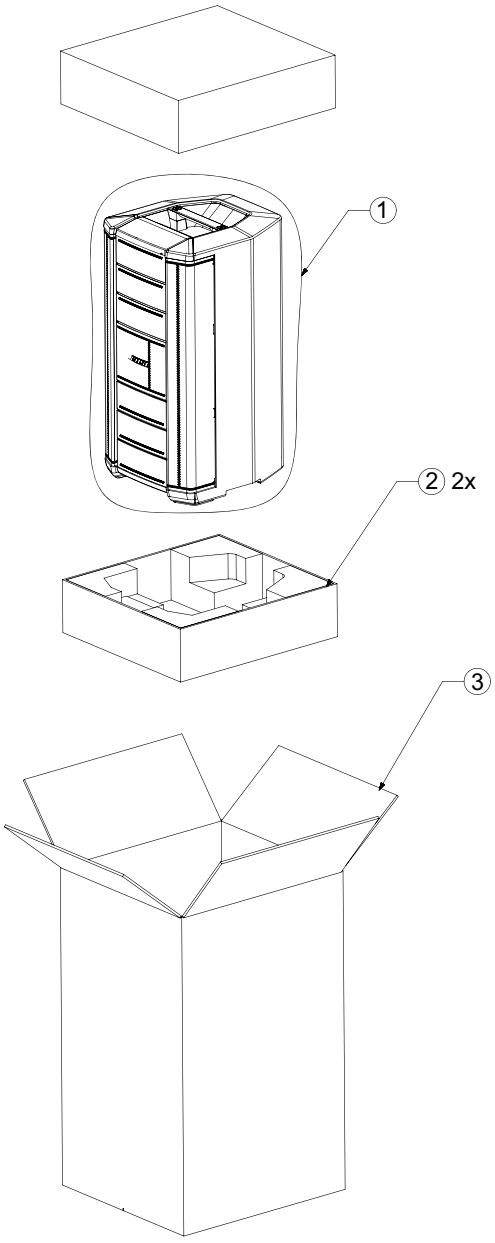


Figure 1. F1 Model 812 Flexible Array Loudspeaker Packing View

PACKAGING PART LIST

F1 Subwoofer

Item Number	Description	Part Number	Qty.	Note
1	PE BAG ,F1, SVCE	744265-001S	1	
2	ENDCAP, BASS, SVC	745193-001S	2	
3	CARTON, BASS (FIRST QUALITY)	625286-001S	1	
-	GUIDE,OWNERS,F1 SPKR & SUBWFR (3 LANG.) GUIDE,OWNERS,F1 SPKR & SUBWFR (8 LANG.) GUIDE,OWNERS,F1 SPKR & SUBWFR (JP)	740644-0010 740743-0010 762081-001S	1 1 1	
-	AU/NZ WARR SLIP SHEET 8.5 X 5.5	355731-0010	1	
-	AC LINE CORD, 120V, 3P, DET, US/CA, ROHS 1.3 AC LINE CORD, 230V, 3P, DET, EU, ROHS 1.4 AC LINE CORD, 100V, 3P, DET, JPN, ROHS 1.2 AC LINE CORD, 240V, 3P, DET, UK, ROHS 1.2 AC LINE CORD, 240V, 3P, DET, AUS, ROHS 1.4	350745-0010 350747-0010 350749-0010 350748-0010 350746-0010	1 1 1 1 1	3 ⚠

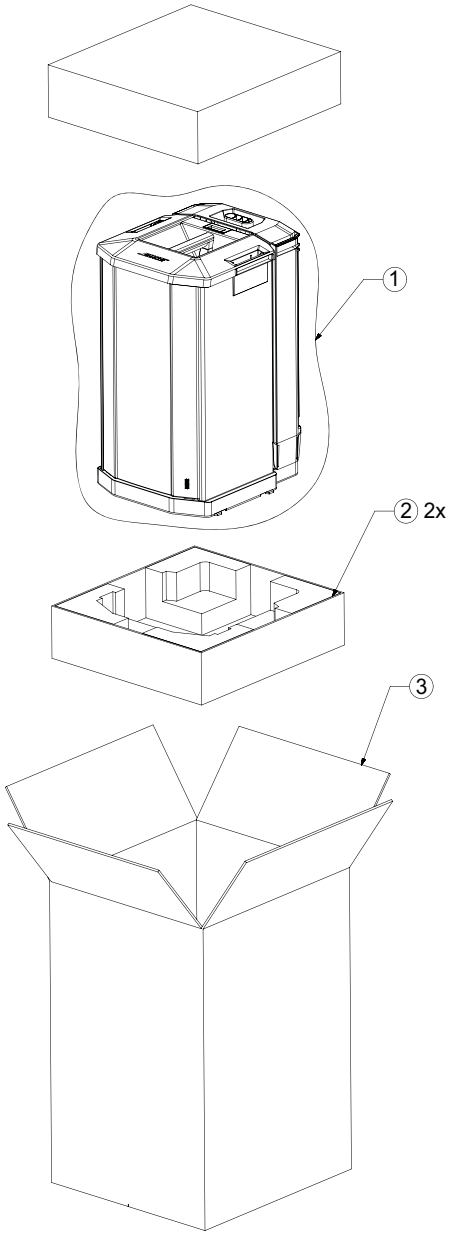


Figure 2. F1 Subwoofer Packing View

MAIN PART LIST

F1 Model 812 Flexible Array Loudspeaker (refer to Figure 3)

Item Number	Description	Part Number	Qty.	Note
1	GRILLE, SIDE, MH, SERV	625268-011S	2	
2	KIT, LOGO, ASSY, MH, BLK, SVCE	720197-011S	1	
3	GRILLE, ARRAY, CENTER , SERV	625267-011S	1	
4	GRILLE, ARRAY, SERV	625266-011S	6	
5	SCREW, M4X1.5X11.5L, PH, TAPPING, BLK (TWIDDLER SCREWS)	757326-011S	32	
6	TWIDDLER 2.5IN NEO TXX SERV	742631-001S	8	
7	COVER, ARRAY, MH, SERV	625273-011S	2	
8	ASSY, POSITIONING MAGNET, SERV	628066-001S	2	
9	BAFFLE, WOOFER	-	1	2
10	PCB ASSY, HALL AFFECT SENSOR, SVCE	724412-001S	2	
11	WOOFER, 12IN, MH, SERV	625260-001S	1	
12	GASKET, ENCLOSURE, MAIN, SERV	625294-011S	1	
13	BRACKET, INTERNAL, MID-HIGH	-	4	
14	COVER, SMPS, RIGHT	-	1	2, 3 ⚠
15	COVER, SMPS, LEFT	-	1	2, 3 ⚠
16	HANDLE RECESS	-	1	2
17	GASKET, ENCLOSURE, RIGHT	-	1	2
18	GASKET, ENCLOSURE, LEFT	-	1	2
19	HANDLE, UPPER	-	1	2
20	INSERT, UPPER HANDLE	-	2	2, 3 ⚠
21	GASKET, ENCLOSURE, UPPER REAR	-	1	2
22	GASKET, SMPS ACCESS PANEL, SVCE	628600-001S	1	
23	PCB ASSY, MAGIC BOX, SMPS, SVCE	628476-001S	1	1
24	PCB ASSY, I/O-DSP, SVCE	628478-001S	1	1
25	GASKET, I/O PANEL, SVCE	628597-001S	1	
26	HANDLE, REAR, MH, SVCE	-	1	2
27	STAND, MOUNT INTERFACE, MH, SERV	625295-011S	1	
28	GASKET, STAND MOUNT INTERFACE, SVCE	628346-001S	1	
29	FOOT, FRONT RIGHT, MH, SERV	625288-012S	1	
30	FOOT, FRONT LEFT, MH, SERV	625288-011S	1	
31	SCREW, FOOT, M4X25	721717-001S	2	
32	PCB, LED, MH	721366-001S	1	
33	LIGHT GUIDE, LED, SVCE	720414-001S	3	
34	LENS, LED, SVCE	720413-001S	1	
35	BAFFLE, ARRAY	-	2	2
-	PANEL, I/O, MH, SERV	625277-011S	1	
-	KNOB, VOLUME, SERV	720516-011S	2	
-	SLIDE, SWITCH CAP, SERV	720517-011S	3	
-	LIGHT GUIDE, LED, /I/O, SERV	720518-001S	3	
-	PANEL SMPS, MH, SERV	625275-011S	1	
-	WIRE HARNESS, DSP, SVCE	744262-001S	1	
-	WIRE HARNESS, IEC/SMPS, SVCE	744260-001S	1	3 ⚠
-	WIRE HARNESS, WOOFER	747424-001S	1	
-	POWER SWITCH (AC POWER)	317373-000S	1	3 ⚠

MAIN PART LIST (CONT.)

F1 Model 812 Flexible Array Loudspeaker (refer to Figure 3)

Item Number	Description	Part Number	Qty.	Note
-	SHRINK TUBE, AC SWITCH	753068-001S	1	3
-	SHRINK TUBE, AC INLET	753069-001S	1	⚠

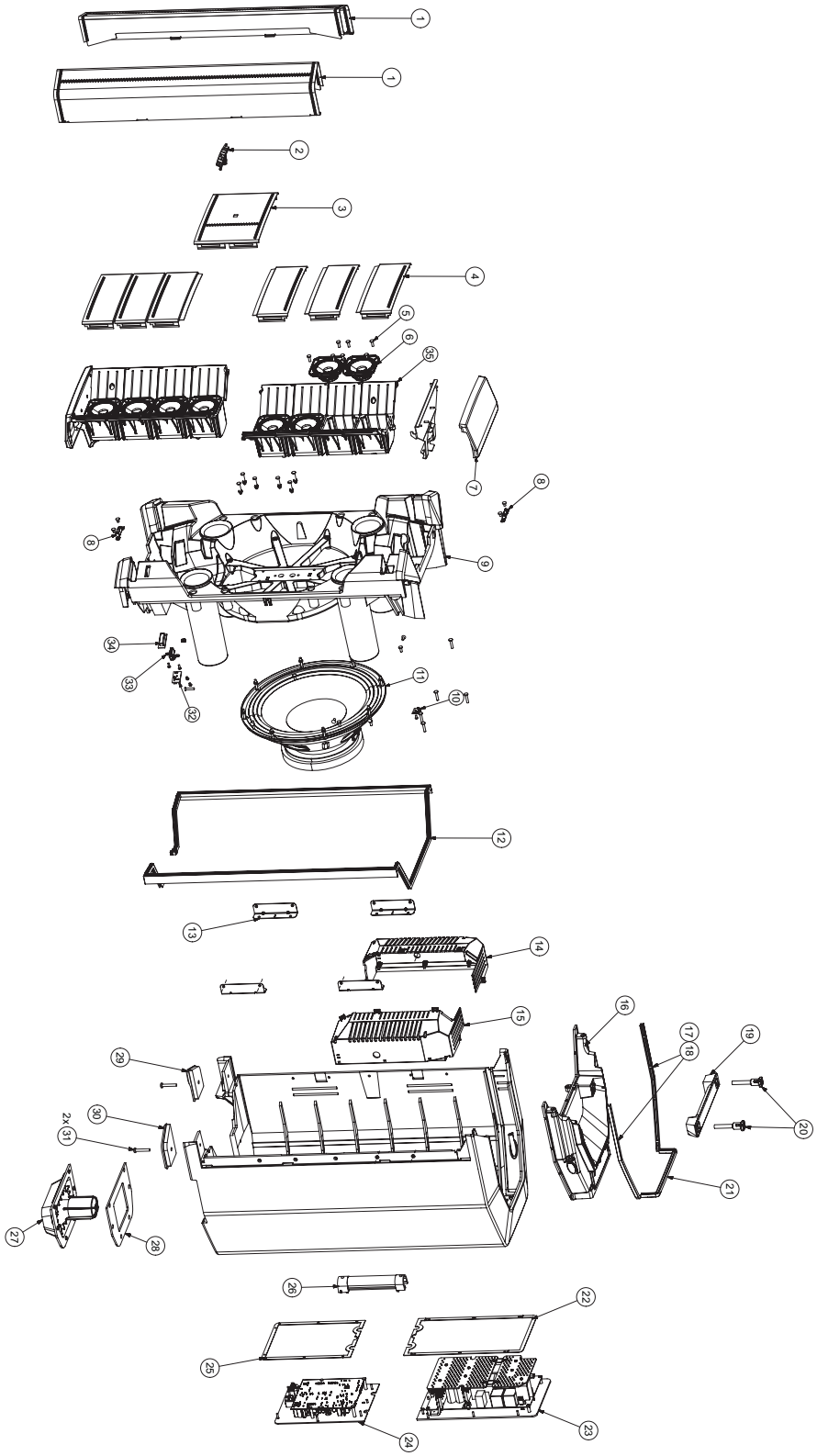


Figure 3. F1 Model 812 Flexible Array Loudspeaker

MAIN PART LIST

F1 Subwoofer (refer to Figure 4)

Item Number	Description	Part Number	Qty.	Note
1	WOOFER, 10 INCH, BASS, SVCE	625261-001S	2	
2	FOOT, BOTTOM, BASS, SVCE	625289-011S	2	
3	GRILLE, SUB, SVCE	625269-011S	1	
4	STAND, PLASTIC, SVCE	716548-011S	1	
5	PCB ASSY, DSP – I/O, BASS, SVCE	716571-001S	1	1
6	SCREW, FOOT, M4x25	721717-001S	2	
7	SCREW, M4, GRILLE, BASS	625290-011S	2	
8	ASSEMBLY, SUB, LED, SVCE	722875-001S	1	
9	POWER SUPPLY, SUB, SVCE (PCB ASSY ONLY)	628476-001S	1	1
	POWER SUPPLY/AMP SUBASSY, SVC (INCLUDES MOUNTING PLATE, GASKET, AC INLET AND POWER SWITCH)	718294-001S		
-	SCREW, WOOFER, M4x25	721717-001S	16	
-	WIRE HARNESS, WOOFER, LONG, SVC	745190-001S	1	
-	WIRE HARNESS, WOOFER, SHORT, SVC	745191-001S	1	
-	WIRE HARNESS, DSP, SVC	745192-001S	1	
-	SMPS, COVER, BASS, SVCE	715782-011S	1	
-	KNOB, VOLUME, SERV	720516-011S	2	
-	SLIDE, SWITCH CAP, SERV	720517-011S	3	
-	LIGHT GUIDE, LED, /I/O, SERV	720518-001S	3	
-	LIGHTGUIDE, LED, SUB, SVCE	722863-001S	1	
-	LENS, LED, SUB	722860-001S	1	
-	POWER SWITCH (AC)	317373-000S	1	3 ⚠
-	GASKET, I/0 PANEL, SVC	728370-011S	1	
-	SMPS, GASKET, BASS, SVC	728344-011S	1	
-	PANEL, I/O, BASS, SVC	625278-011S	1	
-	AC SWITCH, SHRINK TUBE	753068-001S	1	3 ⚠
-	AC INLET, SHRINK TUBE	753069-001S	1	3 ⚠

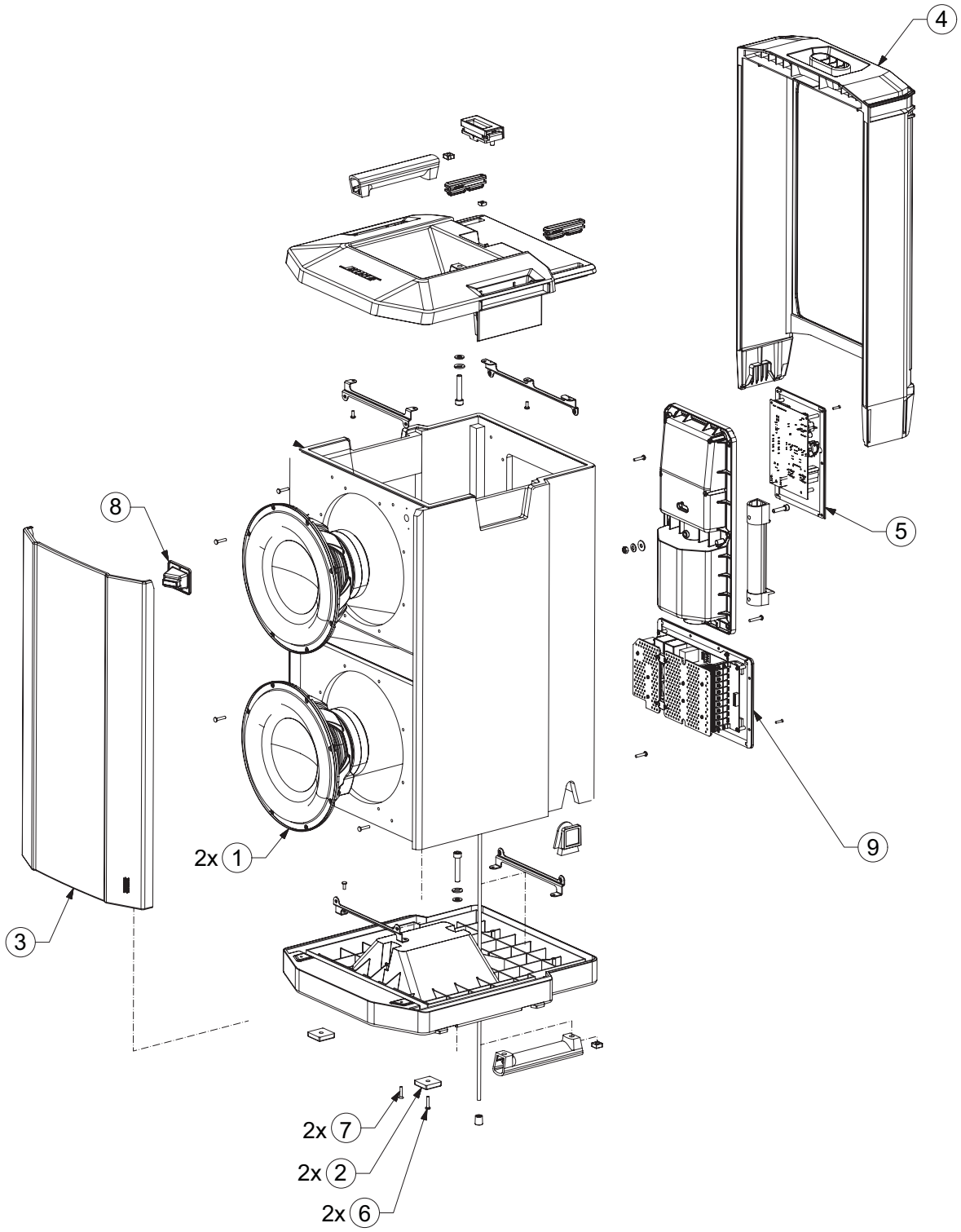


Figure 4. F1 Subwoofer Exploded View

ELECTRICAL PART LIST

SMPS / Power Amplifier PCB Assembly

Resistors

Reference Designator	Description	Vendor Part Number	Note
R2	CHIP, RES, 240K, OHM, 1%, 1/4W, 1206	QCF041010-2403	3 ⚠
R4	CHIP, RES, Anti-Surge, 4.7 OHM, 5%, 1/8W, 0805,WK08S, WALSIN	QCF085021-4708	
R5	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R6	GP, CHIP, RES., 10K OHM, 1/8W, 1%, 0805	QCF081020-1002	
R7	CHIP, RES, 240K, OHM, 1%, 1/4W, 1206	QCF041010-2403	3 ⚠
R8	CHIP, RES, 0.01 OHM, 1%, 1W, 1206, WW12RR010FT, Walsin	QCF101010-1006	
R14	CHIP, RES., 1%, 1W, 499 OHM, 2512	QCF101250-4990	
R15	GP, CHIP, RES., 10K OHM, 1/8W, 1%, 0805	QCF081020-1002	
R16	CHIP, RES, 240K, OHM, 1%, 1/4W, 1206	QCF041010-2403	3 ⚠
R32	GP, CHIP, RES., 10K OHM, 1/8W, 1%, 0805	QCF081020-1002	
R34	GP, CHIP, RES., 10K OHM, 1/8W, 1%, 0805	QCF081020-1002	
R35	CHIP, RES, Surge, 39 OHM, 5%, 1/4W, 1206, WK12S, Walsin	QCF045012-3909	
R36	CHIP, RES, Anti-Surge, 8.2 OHM, 5%, 1/4W, 1206,WK12S, Walsin	QCF045011-8208	
R38	H/I, RESISTOR, 5.1K OHM, 1W	QVF105000-5101	
R38	H/I, RESISTOR, 5.1K OHM, 1W	QVF105000-5101	
R39	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603, 1K, OHM	QCF011030-1001	
R45	CHIP, RES, 680 OHM, 1/10W, 1%, 0603	QCF011030-6800	
R48	CHIP, RES, 120K OHM, 1%, 1/10W, 0603	QCF011030-1203	
R51	GP, CHIP, RES., 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R52	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R54	GP, CHIP, RES. 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R55	CHIP, RES, 56K OHM, 1/10W, 1%, 0603	QCF011030-5602	
R56	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R57	GP, CHIP, RES., 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R59	GP, CHIP, RES., 4.7K OHM, 1/10W, 1%, 0603	QCF011030-4701	
R60	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R61	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R62	CHIP, RES., 6.49K OHM, 1%, 1/10W, 0603	QCF011030-6491	
R63	GP, CHIP, RES., 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R64	CHIP, RES, 1/4W, 1%, 1.2M OHM, , 1206	QCF041010-1204	
R65	CHIP, RES, 1/4W, 1%, 1.2M OHM, , 1206	QCF041010-1204	
R66	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603, 1K, OHM	QCF011030-1001	
R67	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R68	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R69	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R70	CHIP, RES, Anti-Surge, 8.2 OHM, 5%, 1/4W, 1206,WK12S, Walsin	QCF045011-8208	
R71	GP, CHIP, RES., 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R72	GP, CHIP, RES., 220K OHM, 1/8W, 1%, 0805	QCF081020-2203	
R75	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	

ELECTRICAL PART LIST

SMPS / Power Amplifier PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R76	GP, CHIP, RES., 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R77	CHIP, RES, 56K, OHM, 1%, 1/4W, 1206	QCF041010-5602	
R78	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R79	CHIP, RES, Anti-Surge, 8.2 OHM, 5%, 1/4W, 1206,WK12S, Walsin	QCF045011-8208	
R80	GP, CHIP, RES., 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R81	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R84	CHIP, RES, 220K OHM, 1/4W, 1%, 1206	QCF041010-2203	
R85	CHIP, RES., 22 OHM, 1/4W, 1%, 1206	QCF041010-2209	
R86	CHIP, RES., 22 OHM, 1/4W, 1%, 1206	QCF041010-2209	
R87	GP, CHIP, RES., 20 OHM, 1/10W, 1%, 0603	QCF011030-2009	
R88	GP, CHIP, RES., 150, OHM, 1%, 1/10W, 0603	QCF011030-1500	
R89	GP, CHIP, RES., 15K OHM, 1%, 1/10W, 0603	QCF011030-1502	
R91	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603, 1K, OHM	QCF011030-1001	
R92	CHIP, RES, 3.6M, OHM, 1%, 1206, WK12V3604FTL,WALSIN, 1/4W, 500V	QCF041011-3604	
R93	CHIP, RES, 150K OHM, 1/10W, 1%, 0603	QCF011030-1503	
R97	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603, 1K, OHM	QCF011030-1001	
R98	CHIP, RES, 11K OHM, 1%, 1/10W, 0603	QCF011030-1102	
R100	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R101	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R102	GP, CHIP, RES., 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R104	CHIP, RES, 56K, OHM, 1%, 1/4W, 1206	QCF041010-5602	
R105	CHIP, RES, Anti-Surge, 2 OHM, 5%, 1/8W, 0805,WK08S, WALSIN	QCF085021-2008	
R106	CHIP, RES., 1%, 1W, 499 OHM, 2512	QCF101250-4990	
R107	CHIP, RES., 6.49K OHM, 1%, 1/10W, 0603	QCF011030-6491	
R108	GP, CHIP, RES, 10 OHM, 1%, 1/10W, 0603	QCF011030-1009	
R109	CHIP, RES, 3K OHM, 1/10W, 1%, 0603	QCF011030-3001	
R110	CHIP, RES, 0.01 OHM, 1%, 1W, 1206, WW12RR010FT, Walsin	QCF101010-1006	3 ⚠
R111	CHIP, RES, Anti-Surge, 8.2 OHM, 5%, 1/4W, 1206,WK12S, Walsin	QCF045011-8208	
R112	CHIP, RES, 680 OHM, 1/10W, 1%, 0603	QCF011030-6800	
R113	GP, CHIP, RES., 5.6K OHM, 1/10W, 1%, 0603	QCF011030-5601	
R114	CHIP, RES., 22 OHM, 1/4W, 1%, 1206	QCF041010-2209	
R116	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R118	CHIP, RES, Anti-Surge, 2 OHM, 5%, 1/8W, 0805,WK08S, WALSIN	QCF085021-2008	
R119	CHIP, RES., 22 OHM, 1/4W, 1%, 1206	QCF041010-2209	
R120	GP, CHIP, RES, 10 OHM, 1%, 1/10W, 0603	QCF011030-1009	
R122	GP, CHIP, RES., 8.2K OHM, 1/10W, 1%, 0603	QCF011030-8201	
R123	GP, CHIP, RES, 10 OHM, 1%, 1/10W, 0603	QCF011030-1009	
R125	GP, CHIP, RES, 10 OHM, 1%, 1/10W, 0603	QCF011030-1009	
R126	GP, CHIP, RES., 2.2K OHM, 1/10W, 1%, 0603	QCF011030-2201	
R127	GP, CHIP, RES., 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R130	CHIP, RES., 432 OHM, 1%, 1/10W, 0603	QCF011030-4320	
R133	H/I, RESISTOR, 10 OHM, 5%, 1W	QVF105000-1000	
R135	CHIP, RES, 56K, OHM, 1%, 1/4W, 1206	QCF041010-5602	

ELECTRICAL PART LIST

SMPS / Power Amplifier PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R136	H/I, RESISTOR, 10 OHM, 5%, 1W	QVF105000-1000	
R137	CHIP, RES, WALSIN, 4.7 OHM, 1%, 1/8W, 0805	QCF081021-4708	
R139	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R140	GP, CHIP, RES., 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R141	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R142	CHIP, RES, 510K, OHM, 1%, 1/4W, 1206	QCF041010-5103	
R143	CHIP, RES, WALSIN, 4.7 OHM, 1%, 1/8W, 0805	QCF081021-4708	
R144	CHIP, RES, 56K, OHM, 1%, 1/4W, 1206	QCF041010-5602	
R145	CHIP, RES, 510K, OHM, 1%, 1/4W, 1206	QCF041010-5103	
R146	CHIP, RES., 432 OHM, 1%, 1/10W, 0603	QCF011030-4320	
R147	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R148	CHIP, RES., 6.49K OHM, 1%, 1/10W, 0603	QCF011030-6491	
R149	CHIP, RES, WALSIN, 4.7 OHM, 1%, 1/8W, 0805	QCF081021-4708	
R150	CHIP, RES, 3K OHM, 1/10W, 1%, 0603	QCF011030-3001	
R151	CHIP, RES, WALSIN, 4.7 OHM, 1%, 1/8W, 0805	QCF081021-4708	
R152	CHIP, RES, Anti-Surge, 2 OHM, 5%, 1/8W, 0805,WK08S, WALSIN	QCF085021-2008	
R153	GP, CHIP, RES., 560 OHM, 1/10W, 1%, 0603	QCF011030-5600	
R154	GP, CHIP, RES., 5.6K OHM, 1/10W, 1%, 0603	QCF011030-5601	
R155	CHIP, RES., 22 OHM, 1/4W, 1%, 1206	QCF041010-2209	
R156	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R158	CHIP, RES., 6.49K OHM, 1%, 1/10W, 0603	QCF011030-6491	
R159	CHIP, RES., 6.49K OHM, 1%, 1/10W, 0603	QCF011030-6491	
R160	CHIP, RES., 22 OHM, 1/4W, 1%, 1206	QCF041010-2209	
R161	GP, CHIP, RES., 33K OHM, 1/10W, 1%, 0603	QCF011030-3302	
R162	GP, CHIP, RES., 33K OHM, 1/10W, 1%, 0603	QCF011030-3302	
R163	GP, CHIP, RES., 8.2K OHM, 1/10W, 1%, 0603	QCF011030-8201	
R164	CHIP, RES., 6.49K OHM, 1%, 1/10W, 0603	QCF011030-6491	
R166	CHIP, RES., 432 OHM, 1%, 1/10W, 0603	QCF011030-4320	
R167	CHIP, RES., 432 OHM, 1%, 1/10W, 0603	QCF011030-4320	
R168	GP, CHIP, RES., 2.2K OHM, 1/10W, 1%, 0603	QCF011030-2201	
R169	GP, CHIP, RES., 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R170	CHIP, RES., 6.49K OHM, 1%, 1/10W, 0603	QCF011030-6491	
R171	CHIP, RES., 6.49K OHM, 1%, 1/10W, 0603	QCF011030-6491	
R172	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603, 1K, OHM	QCF011030-1001	
R173	CHIP, RES, Surge, 39 OHM, 5%, 1/4W, 1206, WK12S, Walsin	QCF045012-3909	
R174	CHIP, RES, Anti-Surge, 2 OHM, 5%, 1/8W, 0805,WK08S, WALSIN	QCF085021-2008	
R175	CHIP, RES, Surge, 39 OHM, 5%, 1/4W, 1206, WK12S, Walsin	QCF045012-3909	
R176	CHIP, RES, Surge, 39 OHM, 5%, 1/4W, 1206, WK12S, Walsin	QCF045012-3909	
R177	CHIP, RES., 1%, 1W, 499 OHM, 2512	QCF101250-4990	
R178	CHIP, RES, 510K, OHM, 1%, 1/4W, 1206	QCF041010-5103	
R180	CHIP, RES., 1%, 1W, 499 OHM, 2512	QCF101250-4990	
R181	CHIP, RES, Anti-Surge, 2 OHM, 5%, 1/8W, 0805,WK08S, WALSIN	QCF085021-2008	
R182	CHIP, RES, Anti-Surge, 2 OHM, 5%, 1/8W, 0805,WK08S, WALSIN	QCF085021-2008	

ELECTRICAL PART LIST

SMPS / Power Amplifier PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R183	CHIP, RES, Surge, 39 OHM, 5%, 1/4W, 1206, WK12S, Walsin	QCF045012-3909	
R184	CHIP, RES, Surge, 39 OHM, 5%, 1/4W, 1206, WK12S, Walsin	QCF045012-3909	
R185	CHIP, RES, Anti-Surge, 4.7 OHM, 5%, 1/8W, 0805,WK08S, WALSIN	QCF085021-4708	
R187	CHIP, RES, Anti-Surge, 680 OHM, 5%, 1/4W, 1206,WK12S, Walsin	QCF045011-6800	
R189	CHIP, RES, Anti-Surge, 680 OHM, 5%, 1/4W, 1206,WK12S, Walsin	QCF045011-6800	
R191	CHIP, RES, Anti-Surge, 680 OHM, 5%, 1/4W, 1206,WK12S, Walsin	QCF045011-6800	
R192	CHIP, RES, Anti-Surge, 680 OHM, 5%, 1/4W, 1206,WK12S, Walsin	QCF045011-6800	
R195	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603, 1K, OHM	QCF011030-1001	
R198	CHIP, RES, Anti-Surge, 680 OHM, 5%, 1/4W, 1206,WK12S, Walsin	QCF045011-6800	
R199	CHIP, RES, 56K OHM, 1/10W, 1%, 0603	QCF011030-5602	
R200	CHIP, RES, Anti-Surge, 680 OHM, 5%, 1/4W, 1206,WK12S, Walsin	QCF045011-6800	
R201	CHIP, RES, Anti-Surge, 680 OHM, 5%, 1/4W, 1206,WK12S, Walsin	QCF045011-6800	
R202	GP, CHIP, RES, 1/10W, 1%, 49.9 OHM, 0603	QCF011030-4999	
R203	CHIP, RES, Anti-Surge, 680 OHM, 5%, 1/4W, 1206,WK12S, Walsin	QCF045011-6800	
R205	GP, CHIP, RES, 10 OHM, 1%, 1/10W, 0603	QCF011030-1009	
R301	CHIP, RES, 1/4W, 1%, 1.2M OHM, , 1206	QCF041010-1204	
R302	CHIP, RES, 1/4W, 1%, 1.2M OHM, , 1206	QCF041010-1204	
R303	CHIP, RES, 1/4W, 1%, 1.2M OHM, , 1206	QCF041010-1204	
R304	CHIP, RES, 56K OHM, 1/10W, 1%, 0603	QCF011030-5602	
R305	GP, CHIP, RES., 10K OHM, 1/8W, 1%, 0805	QCF081020-1002	
R306	CHIP, RES, 1/4W, 1%, 1.2M OHM, , 1206	QCF041010-1204	
R307	CHIP, RES, 1/4W, 1%, 1.2M OHM, , 1206	QCF041010-1204	
R308	CHIP, RES, 1/4W, 1%, 1.2M OHM, , 1206	QCF041010-1204	
R309	CHIP, RES, 56K OHM, 1/10W, 1%, 0603	QCF011030-5602	
R310	CHIP, RES, 1/4W, 1%, 1.2M OHM, , 1206	QCF041010-1204	
R311	CHIP, RES, 1/4W, 1%, 1.2M OHM, , 1206	QCF041010-1204	
R312	CHIP, RES, 1/4W, 1%, 1.2M OHM, , 1206	QCF041010-1204	
R313	GP, CHIP, RES., 39K OHM, 1/10W, 1%, 0603	QCF011030-3902	
R314	GP, CHIP, RES., 2.2K OHM, 1/10W, 1%, 0603	QCF011030-2201	
R316	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R317	GP, CHIP, RES., 30.1K 1/10W, 1%, 0603	QCF011030-3012	
R318	GP, CHIP, RES., 1/10W, 1%, 100 OHM, 0603	QCF011030-1000	
R319	GP, CHIP, RES., 39K OHM, 1/10W, 1%, 0603	QCF011030-3902	
R322	GP, CHIP, RES., 39K OHM, 1/10W, 1%, 0603	QCF011030-3902	
R325	GP, CHIP, RES., 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R326	CHIP, RES, 56K OHM, 1/10W, 1%, 0603	QCF011030-5602	
R401	CHIP, RES, 1/4W, 1%, 1.2M OHM, , 1206	QCF041010-1204	
R402	CHIP, RES, 1/4W, 1%, 1.2M OHM, , 1206	QCF041010-1204	
R403	CHIP, RES, 1/4W, 1%, 1.2M OHM, , 1206	QCF041010-1204	
R405	GP, CHIP, RES., 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	

ELECTRICAL PART LIST

SMPS / Power Amplifier PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R406	GP, CHIP, RES., 6.8K OHM, 1/10W, 1%, 0603	QCF011030-6801	
R407	GP, CHIP, RES., 6.8K OHM, 1/10W, 1%, 0603	QCF011030-6801	
R408	CHIP, RES, 2.7K OHM, 1/10W, 1%, 0603	QCF011030-2701	
R409	CHIP, RES, 910 OHM, 1%, 1/10W, 0603	QCF011030-9100	
R410	GP, CHIP, RES., 75K OHM, 1/10W, 1%, 0603	QCF011030-7502	
R411	GP, CHIP, RES., 22K OHM, 1/10W, 1%, 0603	QCF011030-2202	
R415	GP, CHIP RES, 4.02K OHM, 1/10W, 1%, 0603	QCF011030-4021	
R416	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R417	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R418	GP, CHIP, RES., 75K OHM, 1/10W, 1%, 0603	QCF011030-7502	
R420	GP, CHIP, RES., 1.8K OHM, 1/10W, 1%, 0603	QCF011030-1801	
R421	GP, CHIP, RES., 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R422	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R423	GP, CHIP, RES, 1M OHM, 1%, 1/10W, 0603	QCF011030-1004	
R426	GP, CHIP RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R427	GP, CHIP RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R428	GP, CHIP, RES., 0 OHM, 1/10W, 5%, 0603	QCF015030-0000	
R430	GP, CHIP, RES, 10 OHM, 1%, 1/10W, 0603	QCF011030-1009	
R432	GP, CHIP, RES., 0 OHM, 1/10W, 5%, 0603	QCF015030-0000	
R435	CHIP, RES., 220 OHM, 1/4W, 1%, 1206	QCF041010-2200	
R436	GP, CHIP, RES., 75 OHM, 1/10W, 1%, 0603	QCF011030-7509	
R437	CHIP, RES, 4.7, OHM, 1/4, W, 1%, 1206	QCF041010-4708	
R450	GP, CHIP, RES., 0 OHM, 1/10W, 5%, 0603	QCF015030-0000	
R452	CHIP, RES, Anti-Surge, 4.7 OHM, 5%, 1/8W, 0805,WK08S, WALSIN	QCF085021-4708	
R453	GP, CHIP, RES., 0 OHM, 1/8W, 5%, 0805	QCF085020-0000	
R460	GP, CHIP, RES., 0 OHM, 1/10W, 5%, 0603	QCF015030-0000	
R462	CHIP, RES, Anti-Surge, 4.7 OHM, 5%, 1/8W, 0805,WK08S, WALSIN	QCF085021-4708	
R463	GP, CHIP, RES., 0 OHM, 1/8W, 5%, 0805	QCF085020-0000	
R464	CHIP, RES, Anti-Surge, 4.7 OHM, 5%, 1/8W, 0805,WK08S, WALSIN	QCF085021-4708	
Rx1	CHIP, RES., 470K OHM, 1/10W, 1%, 0603	QCF011030-4703	
Rx2	CHIP, RES, 120K OHM, 1%, 1/10W, 0603	QCF011030-1203	
Rx3	GP, CHIP, RES., 75 OHM, 1/10W, 1%, 0603	QCF011030-7509	
Rx4	GP, CHIP, RES., 75 OHM, 1/10W, 1%, 0603	QCF011030-7509	
Rx5	GP, CHIP, RES., 75 OHM, 1/10W, 1%, 0603	QCF011030-7509	
Rx6	GP, CHIP, RES., 75 OHM, 1/10W, 1%, 0603	QCF011030-7509	
Rx14	CHIP, RES, WALSIN, 4.7 OHM, 1%, 1/8W, 0805	QCF081021-4708	
Rx15	CHIP, RES, WALSIN, 4.7 OHM, 1%, 1/8W, 0805	QCF081021-4708	
Rx16	CHIP, RES, WALSIN, 4.7 OHM, 1%, 1/8W, 0805	QCF081021-4708	
Rx17	CHIP, RES, WALSIN, 4.7 OHM, 1%, 1/8W, 0805	QCF081021-4708	
Rx20	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603, 1K, OHM	QCF011030-1001	
Rx21	CHIP, RES., 470 OHM, 1/10W, 1%, 0603	QCF011030-4700	
Rx25	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603, 1K, OHM	QCF011030-1001	
Rx26	CHIP, RES., 470 OHM, 1/10W, 1%, 0603	QCF011030-4700	
Rx30	METAL, OXIDE, FILM, RES, 2.2K OHM, 5%, 1W, MOF, P=12.5MM	QAO105001-2201	
Rx31	METAL, OXIDE, FILM, RES, 2.2K OHM, 5%, 1W, MOF, P=12.5MM	QAO105001-2201	

ELECTRICAL PART LIST

SMPS / Power Amplifier PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
Rx32	CHIP, RES, 240K, OHM, 1%, 1/4W, 1206	QCF041010-2403	3 ⚠
Rx33	CHIP, RES, 240K, OHM, 1%, 1/4W, 1206	QCF041010-2403	3 ⚠
Rx34	CHIP, RES, 240K, OHM, 1%, 1/4W, 1206	QCF041010-2403	3 ⚠
Rx35	CHIP, RES, Surge, 39 OHM, 5%, 1/4W, 1206, WK12S, Walsin	QCF045012-3909	
Rx36	CHIP, RES, Surge, 39 OHM, 5%, 1/4W, 1206, WK12S, Walsin	QCF045012-3909	
Rx37	CHIP, RES., 22 OHM, 1/4W, 1%, 1206	QCF041010-2209	
Rx38	CHIP, RES., 22 OHM, 1/4W, 1%, 1206	QCF041010-2209	
Rx39	CHIP, RES., 22 OHM, 1/4W, 1%, 1206	QCF041010-2209	
Rx40	CHIP, RES., 22 OHM, 1/4W, 1%, 1206	QCF041010-2209	
Rx41	GP, CHIP, RES., 0 OHM, 1/10W, 5%, 0603	QCF015030-0000	
Rx42	GP, CHIP, RES., 0 OHM, 1/10W, 5%, 0603	QCF015030-0000	

Capacitors

Reference Designator	Description	Vendor Part Number	Note
C1	CAP, SAFETY, 0.47uF, 275V, 10%, X2, P=15MM	PVX2394G0-4740	3 ⚠
C2	CAP, SAFETY, 0.47uF, 275V, 10%, X2, P=15MM	PVX2394G0-4740	3 ⚠
C3	CAP, SAFETY, 0.47uF, 275V, 10%, X2, P=15MM	PVX2394G0-4740	3 ⚠
C4	CAP, MYLAR, P=15MM, 10%, 450V, 1uF	PLM0374L0-1050	
C5	CAP, ELECT, 20%, 450V, 105', CapXon, 220uF, L.ESR, 30X36MM, PITCH=10MM	PVE0995L1-2210	3 ⚠
C6	CHIP, CAP, 10%, 500V, 1210, X7R, 68nF	PSL4564M0-6830	
C7	CHIP, CAP, 10%, 500V, 1210, X7R, 68nF	PSL4564M0-6830	
C9	COND, ELECT, 1000uF, 25V, 20%, 105', 10x20mm	PLE099550-1020	
C10	CHIP, CAP, 10%, 500V, 1210, X7R, 68nF	PSL4564M0-6830	
C11	GP, CHIP, CAP, 0.1uF, 250V, 10%, 1206, X7	PZL4564F0-1040	
C22	SAFETY CAP, 20%, 250V, 0.0022uF, Y1, JN, P=10MM	PVY1395F2-2220	3 ⚠
C23	GP, CHIP, CAP, Walsin, 10%, 100V, 1206, 0.1uF, TYPE X7R	PZL4564A1-1040	
C24	SAFETY CAP, 20%, 250V, 0.0022uF, Y1, JN, P=10MM	PVY1395F2-2220	3 ⚠
C25	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
C26	CAP, ELECT, 20%, 25V, 105', CapXon, 100uF, L.ESR6.3X11MM, PITCH=2.5MMPI	PVE099551-1010	

ELECTRICAL PART LIST

SMPS / Power Amplifier PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C28	GP, CHIP, CAP, 0.1uF, 50V, 10%,0805, TYPE X7R	PYL456470-1040	
C29	GP, CHIP, CAP, 0.1uF, 250V, 10%, 1206, X7	PZL4564F0-1040	
C34	CAP, MPRO, 10%, 630V, 85', PPS, 33nF, P=3.5M	PLR0394P0-3330	
C35	CAP, ELECT, 20%, 400V, 105', CapXon, 15uF, L.ESR10X16MM, PITCH=5MM	PVE0995K1-1560	
C37	GP, CHIP, CAP, 0.1uF, 50V, 10%,1206, TYPE X7R	PZL456470-1040	
C38	GP, CHIP, CAP, 0.1uF, 50V, 10%,0805, TYPE X7R	PYL456470-1040	
C39	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
C40	GP, CHIP CAP, 0.1Uf, 50V, 10%, 0805, TYPE X7R	PYL456470-1040	
C41	CAP, ELECT, 1000uF, 25V, 20%, 105', 10x20mm	PLE099550-1020	
C43	GP, CHIP, CAP, 5%, 50V, 0603, 220pF, TYPE NPO	PXL410370-2210	
C44	CHIP, CAP, 4.7uF, 16V, 10%, 0805, TYPE X7R	PYL456440-4750	
C45	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
C46	CAP, ELECT, 1000uF, 25V, 20%, 105', 10x20mm	PLE099550-1020	
C47	CAP, ELECT, 20%, 80V, 105', CapXon, 2200uF, L.ESR18X47MM, PITCH=7.5MMPIN	PVE099591-2220	
C48	GP, CHIP, CAP, 0.1uF, 50V, 10%,1206, TYPE X7R	PZL456470-1040	
C49	CHIP, CAP, 4.7uF, 16V, 10%, 0805, TYPE X7R	PYL456440-4750	
C50	CHIP, CAP, 10%, 25V, 0805, X7R, AVX, 1uF, 2911050, 0805B105K250	PYL456450-1050	
C52	CHIP, CAP, 1nF, 1000V, 10%, 1206	PZL4564Q0-1020	
C53	CHIP, CAP, 0.001uF, 100V, 10%, 0805, TYPE X7R	PYL4564A0-1020	
C55	CAP, MYLAR, P=15MM, 10%, 450V, 1uF	PLM0374L0-1050	
C57	CAP, ELECT, 1000uF, 25V, 20%, 105', 10x20mm	PLE099550-1020	
C58	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C59	CHIP, CAP, 0.001uF, 100V, 10%, 0805, TYPE X7R	PYL4564A0-1020	
C60	CAP, ELECT, 1000uF, 25V, 20%, 105', 10x20mm	PLE099550-1020	
C61	CHIP, CAP, 10%, 50V, 0603, X7R, 560pF	PXL456470-5610	
C62	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C63	CHIP, CAP, 10%, 25V, 0805, X7R, AVX, 1uF, 2911050, 0805B105K250	PYL456450-1050	
C64	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C65	CAP, ELECT, 20%, 80V, 105', CapXon, 2200uF, L.ESR18X47MM, PITCH=7.5MMPIN	PVE099591-2220	
C66	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C67	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C68	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C69	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
C70	CHIP, CAP, 10%, 500V, 1210, X7R, 68nF	PSL4564M0-6830	
C71	CHIP, CAP, 5%, 250V, 1206, NPO, 100pF, 1206, TYPE NPO	PZL4103F0-1010	
C73	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
C74	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C76	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
C77	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C78	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C79	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
C80	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C81	CAP, MYLAR, , 0.33uF, 250V, 10%, PITCH, 10MM	PLM0375F0-3340	
C82	CHIP, CAP, 10%, 25V, 0603, TYPE X7R, 4.7uF	PXL456450-4750	
C83	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
C84	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	

ELECTRICAL PART LIST

SMPS / Power Amplifier PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C85	CHIP, CAP, 5%, 250V, 1206, NPO, 100pF, 1206, TYPE NPO	PZL4103F0-1010	
C86	CAP, ELECT, 1000uF, 25V, 20%, 105', 10x20mm	PLE099550-1020	
C88	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
C89	CAP, MYLAR, P=15MM, 10%, 450V, 1uF	PLM0374L0-1050	
C90	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
C91	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
C92	GP, CHIP, CAP, 0.1uF, 250V, 10%, 1206, X7	PZL4564F0-1040	
C93	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C94	CHIP, CAP, 10%, 16V, 0603, X5R, 2.2UF	PXL426440-2250	
C95	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C96	CHIP, CAP, 10%, 500V, 1206, X7R, 150pF	PZL4564M0-1510	
C97	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C98	GP, CHIP, CAP, 0.1uF, 250V, 10%, 1206, X7	PZL4564F0-1040	
C99	CHIP, CAP, 5%, 250V, 1206, NPO, 100pF, 1206, TYPE NPO	PZL4103F0-1010	
C100	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C101	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C102	CAP, ELECT, 20%, 450V, 105', CapXon, 220uF, L.ESR, 30X36MM, PITCH=10MM	PVE0995L1-2210	3 ⚠
C103	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C104	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C105	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C107	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C108	CAP, MYLAR, , 0.33uF, 250V, 10%, PITCH, 10MM	PLM0375F0-3340	
C109	CHIP, CAP, 10%, 25V, 0603, TYPE X7R, 4.7uF	PXL456450-4750	
C110	GP, CHIP, CAP, 0.1uF, 250V, 10%, 1206, X7	PZL4564F0-1040	
C111	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C112	CHIP, CAP, 5%, 250V, 1206, NPO, 100pF, 1206, TYPE NPO	PZL4103F0-1010	
C113	CHIP, CAP, 0.22uF, 50V, 10%, 0603, X7R	PXL456470-2240	
C114	GP, CHIP, CAP, 0.1uF, 250V, 10%, 1206, X7	PZL4564F0-1040	
C115	CHIP, CAP, 10%, 500V, 1210, X7R, 68nF	PSL4564M0-6830	
C117	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
C119	GP, CHIP, CAP, Walsin, 10%, 100V, 1206, 0.1uF, TYPE X7R	PZL4564A1-1040	
C121	GP, CHIP, CAP, Walsin, 10%, 100V, 1206, 0.1uF, TYPE X7R	PZL4564A1-1040	
C122	GP, CHIP, CAP, 0.1uF, 50V, 10%,0805, TYPE X7R	PYL456470-1040	
C123	CHIP, CAP, 10%, 500V, 1210, X7R, 68nF	PSL4564M0-6830	
C124	CHIP, CAP, 10%, 500V, 1206, X7R, 150pF	PZL4564M0-1510	
C126	CHIP, CAP, 10%, 16V, 0603, X5R, 2.2UF	PXL426440-2250	
C128	GP, CHIP, CAP, Walsin, 10%, 100V, 1206, 0.1uF, TYPE X7R	PZL4564A1-1040	
C129	COND, MYLAR, P=15MM, 10%, 450V, 1uF	PLM0374L0-1050	
C133	COND, ELECT, 20%, 25V, 105', CapXon, 100uF, L.ESR6.3X11MM, PITCH=2.5MMPI	PVE099551-1010	
C134	CHIP, CAP, 1uF, 25V, 10%, 0603, TYPE X7R	PXL456450-1050	
C136	CHIP, CAP, 10%, 500V, 1206, X7R, 150pF	PZL4564M0-1510	
C138	GP, CHIP, CAP, Walsin, 10%, 100V, 1206, 0.1uF, TYPE X7R	PZL4564A1-1040	

ELECTRICAL PART LIST

SMPS / Power Amplifier PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C141	CAP, ELECT, 20%, 400V, 105', CapXon, 15uF, L.ESR10X16MM, PITCH=5MM	PVE0995K1-1560	
C142	CHIP, CAP, 1.5nF, 50V, 10%, 0603, X7R	PXL456470-1520	
C143	CHIP, CAP, 10%, 50V, 0603, X7R, 560pF	PXL456470-5610	
C144	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C145	GP, CHIP, CAP, 0.1uF, 250V, 10%, 1206, X7	PZL4564F0-1040	
C146	CHIP, CAP, 10%, 50V, 0603, X7R, 560pF	PXL456470-5610	
C147	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C148	GP, CHIP, CAP, 0.1uF, 250V, 10%, 1206, X7	PZL4564F0-1040	
C149	CAP, ELECT, 20%, 80V, 105', CapXon, 2200uF, L.ESR18X47MM, PITCH=7.5MMPIN	PVE099591-2220	
C150	CAP, ELECT, 20%, 80V, 105', CapXon, 2200uF, L.ESR18X47MM, PITCH=7.5MMPIN	PVE099591-2220	
C151	CHIP, CAP, 10%, 500V, 1206, X7R, 150pF	PZL4564M0-1510	
C152	GP, CHIP, CAP, Walsin, 10%, 100V, 1206, 0.1uF, TYPE X7R	PZL4564A1-1040	
C155	GP, CHIP, CAP, Walsin, 10%, 100V, 1206, 0.1uF, TYPE X7R	PZL4564A1-1040	
C156	GP, CHIP, CAP, Walsin, 10%, 100V, 1206, 0.1uF, TYPE X7R	PZL4564A1-1040	
C157	GP, CHIP, CAP, Walsin, 10%, 100V, 1206, 0.1uF, TYPE X7R	PZL4564A1-1040	
C159	GP, CHIP, CAP, Walsin, 10%, 100V, 1206, 0.1uF, TYPE X7R	PZL4564A1-1040	
C160	CHIP, CAP, 1.5nF, 50V, 10%, 0603, X7R	PXL456470-1520	
C161	CHIP, CAP, 10%, 50V, 0603, X7R, 560pF	PXL456470-5610	
C162	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C163	CHIP, CAP, 10%, 500V, 1206, X7R, 150pF	PZL4564M0-1510	
C164	CHIP, CAP, 10%, 500V, 1206, X7R, 150pF	PZL4564M0-1510	
C165	CHIP, CAP, 10%, 500V, 1206, X7R, 150pF	PZL4564M0-1510	
C166	CHIP, CAP, 10%, 500V, 1206, X7R, 150pF	PZL4564M0-1510	
C167	CAP.E, 47uF, 16V, 20%, 105'C, 5x11xP2	PLE099542-4700	
C168	CAP.E, 47uF, 16V, 20%, 105'C, 5x11xP2	PLE099542-4700	
C169	CAP, MPRO, 10%, 630V, 85', PPS, 33nF, P=3.5M	PLR0394P0-3330	
C171	CHIP, CAP, X2, 10%, 250V, 1808, X7R, 1nF	PQL4564F0-1020	
C172	CHIP, CAP, X2, 10%, 250V, 1808, X7R, 1nF	PQL4564F0-1020	
C174	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C195	CAP, ELECT, 20%, 80V, 105', CapXon, 2200uF, L.ESR18X47MM, PITCH=7.5MMPIN	PVE099591-2220	
C197	CAP, ELECT, 20%, 80V, 105', CapXon, 2200uF, L.ESR18X47MM, PITCH=7.5MMPIN	PVE099591-2220	
C310	CHIP, CAP, 1nF, 50V, 10%, 0603, TYPE X7R	PXL456470-1020	
C311	CHIP, CAP, 1nF, 50V, 10%, 0603, TYPE X7R	PXL456470-1020	
C312	GP, CHIP, CAP, 5%, 50V, 0603, 220pF, TYPE NPO	PXL410370-2210	
C313	CHIP, CAP, 0.047uF, 50V, 10%, 0603, X7R	PXL456470-4730	
C314	CHIP, CAP, 1uF, 25V, 10%, 0603, TYPE X7R	PXL456450-1050	
C315	CHIP, CAP, 1nF, 50V, 10%, 0603, TYPE X7R	PXL456470-1020	
C316	CHIP, CAP, 1UF, 50V, 10%, 0805, X7R	PYL456470-1050	
C317	GP, CHIP, CAP, 1uF, 16V, 10%, 0603, TYPE X7R	PXL456440-1050	
C318	CHIP, CAP, 18pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1800	
C319	CHIP, CAP, 18pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1800	
C420	CHIP, CAP, 4.7uF, 6.3V, 10%, 0603, TYPE X7R	PXL456420-4750	

ELECTRICAL PART LIST

SMPS / Power Amplifier PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C421	GP, CHIP, CAP, 0.47uF, 50V, 10%, 0603, TYPE X7R	PXL456470-4740	
C422	CHIP, CAP, 1.5nF, 50V, 10%, 0603, X7R	PXL456470-1520	
C426	CHIP, CAP, 4.7nF, 50V, 10%, 0603, X7R	PXL456470-4720	
C427	GP, CHIP, CAP, 1uF, 16V, 10%, 0603, TYPE X7R	PXL456440-1050	
C428	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C429	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C430	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C431	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C432	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C434	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C435	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
C436	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
C437	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
C439	CHIP, CAP, 10%, 500V, 1206, X7R, 150pF	PZL4564M0-1510	
Cx2	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
Cx4	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
Cx5	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
Cx6	CHIP, CAP, 1.5nF, 50V, 10%, 0603, X7R	PXL456470-1520	
Cx7	CHIP, CAP, 1.5nF, 50V, 10%, 0603, X7R	PXL456470-1520	
Cx8	CHIP, CAP, 47pF, 50V, 5%, 0603, NPO	PXL410370-4700	
Cx9	CHIP, CAP, 47pF, 50V, 5%, 0603, NPO	PXL410370-4700	
Cx10	CHIP, CAP, 1.5nF, 50V, 10%, 0603, X7R	PXL456470-1520	
Cx11	CHIP, CAP, 1.5nF, 50V, 10%, 0603, X7R	PXL456470-1520	
Cx12	CHIP, CAP, 47pF, 50V, 5%, 0603, NPO	PXL410370-4700	
Cx13	CHIP, CAP, 47pF, 50V, 5%, 0603, NPO	PXL410370-4700	
Cx17	CHIP, CAP, X2, 10%, 250V, 1808, X7R, 1nF	PQL4564F0-1020	
Cx18	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
Cx19	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
Cx20	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
Cx21	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
Cx23	CHIP, CAP, 10%, 16V, 0603, X5R, 2.2UF	PXL426440-2250	
Cx24	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
Cx26	CHIP, CAP, 10%, 16V, 0603, X5R, 2.2UF	PXL426440-2250	
Cx27	CHIP, CAP, 10%, 25V, 1206, X7R, 10uF	PZL456450-1060	
Cx28	CHIP, CAP, 0.22uF, 50V, 10%, 0603, X7R	PXL456470-2240	
Cx29	CHIP, CAP, 0.22uF, 50V, 10%, 0603, X7R	PXL456470-2240	
Cx30	CHIP, CAP, 0.22uF, 50V, 10%, 0603, X7R	PXL456470-2240	

Inductors and Ferrite Beads

Reference Designator	Description	Vendor Part Number	Note
FB1	CHIP, BEAD, 600, OHM, 25%, 100MHZ,, SMD, 0805, DCR, 0.25, OHM, I>1500MA, IDC=20	SCBA08051-6010	
FB2	CHIP, BEAD, 600, OHM, 25%, 100MHZ,, SMD, 0805, DCR, 0.25, OHM, I>1500MA, IDC=20	SCBA08051-6010	
FB3	CHIP, BEAD, 600, OHM, 25%, 100MHZ,, SMD, 0805, DCR, 0.25, OHM, I>1500MA, IDC=20	SCBA08051-6010	
FB4	CHIP, BEAD, 600, OHM, 25%, 100MHZ,, SMD, 0805, DCR, 0.25, OHM, I>1500MA, IDC=20	SCBA08051-6010	
L1	COMMON COIL, MIN., 4mH, AT, 1KHz, ET24-SE6043	SILA17007-4020	3 ⚠

ELECTRICAL PART LIST

SMPS / Power Amplifier PCB Assembly
Inductors and Ferrite Beads (continued)

Reference Designator	Description	Vendor Part Number	Note
L2	COMMON COIL, MIN., 4mH, AT, 1KHz, ET24-SE6043	SILA17007-4020	3 ⚠
L3	TRANSFORMER, PQ2625, SEB164, Sunshine	TSSA00014-0010	3 ⚠
L4	TRANSFORMER, PQ2625, SEB164, Sunshine	TSSA00014-0010	3 ⚠
L5	TOROID, INDUCTOR, T25*15*10, 70uH, DCR, (1-2), 75M (MAX)	SILA02016-7000	
L7	INDUCTOR, 7G23B, 22UH, 10%, SAGAMI	SINA03603-2200	
L9	INDUCTOR, 7G23B, 22UH, 10%, SAGAMI	SINA03603-2200	

Diodes

Reference Designator	Description	Vendor Part Number	Note
D1	DIP, DIODE, ITO220AB, UGF2008G-C0, 20A, 600V, TAIWAN SEMICONDUCTOR	RHD102008-0010	
D2	Diode, BRIDGE, KBJ2506	RHD202506-0010	
D3	DIP, DIODE, ITO220AB, UGF2006G-C0, 20A, 400V, TAIWAN SEMICONDUCTOR	RHD102006-0010	
D4	DIP, DIODE, ITO220AB, UGF2006G-C0, 20A, 400V, TAIWAN SEMICONDUCTOR	RHD102006-0010	
D6	CHIP, DIODE, S100W, 1.0A, 100V, DO-214AC, PANJIT	RCD100110-0010	
D7	GP, DIODE, BAV21WS, SOD-323, FAST, SWITCHING TYPE	RCD100021-0010	
D8	CHIP, DIODE, S100W, 1.0A, 100V, DO-214AC, PANJIT	RCD100110-0010	
D9	CHIP, DIODE, S100W, 1.0A, 100V, DO-214AC, PANJIT	RCD100110-0010	
D10	CHIP, DIODE, S100W, 1.0A, 100V, DO-214AC, PANJIT	RCD100110-0010	
D11	DIODE, CHIP, SS210, SMB, USD, MIC	RCD102100-0110	
D12	CHIP, DIODE, 1N4007, SMA	RCD114007-0010	
D13	CHIP, DIODE, SMA, TSC, ESH1D-R3G, 15nS, 1A, 200	RCD101003-0010	
D14	CHIP, DIODE, S100W, 1.0A, 100V, DO-214AC, PANJIT	RCD100110-0010	
D15	DIODE, CHIP, SS210, SMB, USD, MIC	RCD102100-0110	
D16	GP, DIODE, BAV21WS, SOD-323, FAST, SWITCHING TYPE	RCD100021-0010	
D17	DIP, DIODE, ITO220AB, UGF2006G-C0, 20A, 400V, TAIWAN SEMICONDUCTOR	RHD102006-0010	
D18	DIP, DIODE, ITO220AB, UGF2006G-C0, 20A, 400V, TAIWAN SEMICONDUCTOR	RHD102006-0010	
D19	CHIP, DIODE, SMA, TSC, ESH1D-R3G, 15nS, 1A, 200	RCD101003-0010	
D20	CHIP, DIODE, S100W, 1.0A, 100V, DO-214AC, PANJIT	RCD100110-0010	
D21	CHIP, DIODE, SMA, TSC, ESH1D-R3G, 15nS, 1A, 200	RCD101003-0010	

ELECTRICAL PART LIST

SMPS / Power Amplifier PCB Assembly

Diodes (continued)

Reference Designator	Description	Vendor Part Number	Note
D22	CHIP, DIODE, SMA, TSC, ESH1D-R3G, 15nS, 1A, 200	RCD101003-0010	
D23	GP, DIODE, BAV21WS, SOD-323, FAST, SWITCHING TYPE	RCD100021-0010	
D24	CHIP, DIODE, SMA, TSC, ESH1D-R3G, 15nS, 1A, 200	RCD101003-0010	
D25	CHIP, DIODE, SMA, TSC, ESH1D-R3G, 15nS, 1A, 200	RCD101003-0010	
D26	CHIP, DIODE, SMA, TSC, ESH1D-R3G, 15nS, 1A, 200	RCD101003-0010	
D27	CHIP, DIODE, SMA, TSC, ESH1D-R3G, 15nS, 1A, 200	RCD101003-0010	
D28	CHIP, DIODE, SMA, TSC, ESH1D-R3G, 15nS, 1A, 200	RCD101003-0010	
D29	GP, DIODE, BAV21WS, SOD-323, FAST, SWITCHING TYPE	RCD100021-0010	
D30	GP, DIODE, BAV21WS, SOD-323, FAST, SWITCHING TYPE	RCD100021-0010	
D31	GP, DIODE, BAV21WS, SOD-323, FAST, SWITCHING TYPE	RCD100021-0010	
D32	GP, DIODE, BAV21WS, SOD-323, FAST, SWITCHING TYPE	RCD100021-0010	
D33	CHIP, DIODE, S100W, 1.0A, 100V, DO-214AC, PANJIT	RCD100110-0010	
D34	CHIP, DIODE, S100W, 1.0A, 100V, DO-214AC, PANJIT	RCD100110-0010	
D35	GP, DIODE, BAV21WS, SOD-323, FAST, SWITCHING TYPE	RCD100021-0010	
D40	CHIP, DIODE, 1N4007, SMA	RCD114007-0010	
D420	GP, DIODE, BAV21WS, SOD-323, FAST, SWITCHING TYPE	RCD100021-0010	
D421	GP, DIODE, BAV21WS, SOD-323, FAST, SWITCHING TYPE	RCD100021-0010	
D423	DIODE, SW, BAV99, DIODES INC,SOT-23, 3PIN, SMT TYPE	RCD100099-0010	
D461	CHIP, DIODE, US1M, SMA, 1A, 1000V, FAST, 75nS	RCD100010-0030	
Dx1	SCHOTTKY, DIODE, SBR0220T5-7, 0.2A, 20V	RCD100220-0010	
Dx2	SCHOTTKY, DIODE, SBR0220T5-7, 0.2A, 20V	RCD100220-0010	
Dx3	SCHOTTKY, DIODE, SBR0220T5-7, 0.2A, 20V	RCD100220-0010	
Dx4	SCHOTTKY, DIODE, SBR0220T5-7, 0.2A, 20V	RCD100220-0010	
ZD1	CHIP, ZENER, 400mW, SOD323, PDZ12B, 12V	RCZ030012-0010	
ZD2	CHIP, ZENER, 400mW, SOD323, PDZ12B, 12V	RCZ030012-0010	
ZD20	CHIP, ZENER, 400mW, SOD323, PDZ12B, 12V	RCZ030012-0010	
ZD21	CHIP, ZENER, 400mW, SOD323, PDZ12B, 12V	RCZ030012-0010	

Transistors

Reference Designator	Description	Vendor Part Number	Note
Q1	MOSFET, N-CH, TO220AB, SiHP22N60E, 21A, 600V, VISHAY	RHM220600-1001	
Q2	MOSFET, N-CH, TO220AB, SiHP22N60E, 21A, 600V, VISHAY	RHM220600-1001	

ELECTRICAL PART LIST

SMPS / Power Amplifier PCB Assembly

Transistors (continued)

Reference Designator	Description	Vendor Part Number	Note
Q3	MOSFET, N-CH, TO220AB, SiHP22N60E, 21A, 600V, VISHAY	RHM220600-1001	
Q4	PNP, CHIP, TRANSISTOR, PMBT2907, SOT-23	RCPA02907-0001	
Q5	N-CHANNEL, MOS, TO-220E, IRFB4227PBF	RHM004227-1001	
Q6	MOSFET, N-CH, TO220AB, SiHP22N60E, 21A, 600V, VISHAY	RHM220600-1001	
Q8	NPN, CHIP, TRANSISTOR, PMBT2222, SOT-23	RCNA02222-0001	
Q9	PNP, CHIP, TRANSISTOR, PMBT2907, SOT-23	RCPA02907-0001	
Q10	PNP, CHIP, TRANSISTOR, PMBT2907, SOT-23	RCPA02907-0001	
Q11	NPN, CHIP, TRANSISTOR, PMBT2222, SOT-23	RCNA02222-0001	
Q12	PNP, CHIP, TRANSISTOR, PMBT2907, SOT-23	RCPA02907-0001	
Q15	N-CHANNEL, MOS, TO-220E, IRFB4227PBF	RHM004227-1001	
Q16	N-CHANNEL, MOS, TO-220E, IRFB4227PBF	RHM004227-1001	
Q17	CHIP, MOSFET, 2N7002, SOT-23, N-CHANNEL	RCM207002-1001	
Q18	MOSFET, N-CH, TO220AB, SiHP22N60E, 21A, 600V, VISHAY	RHM220600-1001	
Q19	N-CHANNEL, MOS, TO-220E, IRFB4227PBF	RHM004227-1001	
Q21	NPN, CHIP, TRANSISTOR, PMBT2222, SOT-23	RCNA02222-0001	
Q25	N-MOSFET, AO3402, SOT-23	RCM003402-1001	
Q26	P-MOSFET, AO3401A, SOT-23	RCM003401-2001	
Q27	N-MOSFET, AO3402, SOT-23	RCM003402-1001	
Q28	P-MOSFET, AO3401A, SOT-23	RCM003401-2001	
Q29	N-MOSFET, AO3402, SOT-23	RCM003402-1001	
Q30	P-MOSFET, AO3401A, SOT-23	RCM003401-2001	
Q31	N-MOSFET, AO3402, SOT-23	RCM003402-1001	
Q32	P-MOSFET, AO3401A, SOT-23	RCM003401-2001	
Qx1	NPN, CHIP, TRANSISTOR, PMBT2222, SOT-23	RCNA02222-0001	
Qx2	PNP, CHIP, TRANSISTOR, PMBT2907, SOT-23	RCPA02907-0001	
Qx3	PNP, CHIP, TRANSISTOR, SOT23, ZXTP25020CFHTA, ZETEX	RCP025020-0001	
Qx4	PNP, CHIP, TRANSISTOR, SOT23, ZXTP25020CFHTA, ZETEX	RCP025020-0001	

Integrated Circuits

Reference Designator	Description	Vendor Part Number	Note
U4	IC, 3P, TL431, SOT-23, MOBICON,VOLTAGE, REGULATOR	RCI004310-0001	
U5	IC, 4PIN, SMT, EL817C, Ever, Light	RCI000817-0001	3 ⚠
U8	DIP, IC, KA78R15CTU, Fairchild, TO-220F-4L	RHI078015-0001	
U11	DIP, IC, 3P, PI, DIP-8C, TNY278P	RHI000278-0001	
U12	IC, 4PIN, SMT, EL817C, Ever, Light	RCI000817-0001	3 ⚠
U14	IC, 3P, TL431, SOT-23, MOBICON,VOLTAGE, REGULATOR	RCI004310-0001	
U15	DIP, IC, TO-220E, LM7812	RHI007812-0001	
U16	IC, 16P, IRS2092S, SOIC16N,AUDIO, DRIVER, IR	RCI002092-0001	
U18	IC, 16P, IRS2092S, SOIC16N,AUDIO, DRIVER, IR	RCI002092-0001	

ELECTRICAL PART LIST

SMPS / Power Amplifier PCB Assembly

Integrated Circuits (continued)

Reference Designator	Description	Vendor Part Number	Note
U27	DIP, IC, REGULATOR, ST, L7805CV-DG, TO-220, 4%, 5V, 1.5A	RHI007805-0001	
U28	DIP, IC, REGULATOR, ST, L7905CV-DG, TO-220, 4%, 5V, 1.5A	RHI007905-0001	
U31	IC, OP, AMP, DUAL, 8P, SO-8, NJM4580, IC, OP, AMP, DUAL, 8P	RCI004580-0001	
U32	IC, OP, AMP, DUAL, 8P, SO-8, NJM4580, IC, OP, AMP, DUAL, 8P	RCI004580-0001	
U301	IC, 16P, SOP-16, UCC28063	RCI028063-0001	
U401	IC, 16P, SO16N, L6599AD, ST	RCI006599-0001	
U402	IC, 8P, SOP-8, LM393,AUDIO, DRIVER, IR	RCI000393-0001	
U403	IC, LM321, SOT-23-0.95-5	RCI000321-0001	

Miscellaneous

Reference Designator	Description	Vendor Part Number	Qty.	Note
F1	FUSE, 10A, 250V, SLOW BLOW	KSAA20400-0010	1	3 ⚠
F1	FUSE HOLDER, 5*20MM, BXSJ-01-01	CFC021001-1001	2	3 ⚠
Fx1	CHIP, FUSE, 0.5A/63V, 0468.500NR, 1206, LITTELFUSE	KCCA01203-0001	2	3 ⚠
Fx2	CHIP, FUSE, 0.5A/63V, 0468.500NR, 1206, LITTELFUSE	KCCA01203-0001	2	3 ⚠
J1	CONNECTOR, 2 PIN, P=3.96, VDE/UL, WHITE, REMOVED PIN	CCN396031-0102	1	3 ⚠
J4	CONNECTOR, 2 PIN, LEOCO, 3951, RED POST, BASE, TOP, P=3.96	CCN396120-0102	1	
J5	GP, CONNECTOR, 2, PIN, LEOCO, 3951, WHITE, POST, BASE, TOP, P=3.96	CCN396020-0102	1	
J7	GP, CONNECTOR, B3B-XH-A, 3 PIN,POST, BASE, TOP, P=2.5	CCN250000-0103	1	
J11	GP, CONNECTOR, 10 PIN, P=2.54	CCN254000-0110	1	
NTC1	NTNTC, 10K OHM, 0805, NTC, RESISTOR G, NCP18XH103F03RB	RNT003001-1690	1	3 ⚠
NTC2	NTC, 10k, Ohm, 0805, NTC, RESISTOR, NCP18XH103F03RB	RCT108050-1030	1	3 ⚠
TR2	TRANSFORMER, ER49, SEB008, Sunshine	TSSA00015-0010	1	3 ⚠
TR3	TRANSFORMER, EEL19, SEB163, Sunshine	TSSA00016-0010	1	3 ⚠
TVS1	MOV 300VA 471KD20-P10R DIP BRIGHTKING	RHU020471-4001	1	3 ⚠

ELECTRICAL PART LIST

SMPS / Power Amplifier PCB Assembly

Miscellaneous (continued)

Reference Designator	Description	Vendor Part Number	Qty.	Note
-	AC POWER JACK, BLACK, JR-101, 50*21.9mm (Used on subwoofer version)	CJPA11002-0010	1	3
-	AMP, Gasket, EVA, 38 degree, Natural, Black, L237.4xW11.5xT2 (Used on subwoofer version)	IVEA00727-0003	2	
-	AMP, Gasket, EVA, 38 degree, Natural, Black, L237.4xW11.5xT2 (Used on subwoofer version)	IVEA00727-0004	2	
-	Brass Support, M3.0x0.5P, xL6	HOTA02000-0001	2	
-	C/W, 2P, UL1617, 18, AWG, BLUE/BROWN, 100mm, A=3.96VH, B=187#, , 3PIN (Used on subwoofer version)	VWA310092-0001	1	
-	Gasket, 2, 38 degree, Natural, Blac, L143.2xW34.6xT2 (Used on Mid/High version)	IVEA00693-0001	1	
-	Gasket, 3, 38 degree, Natural, Blac, L143.2xW19xT2 (Used on Mid/High version)	IVEA00693-0002	1	
-	Gasket, 38 degree, Natural, Black, L216.2xW7.9xT2 (Used on Mid/High version)	IVEA00692-0001	2	
-	GP, TUBING, SRK, DIA=20, L=40mm, BLACK, 50%, SHRINKAGE, VINYL (Used on subwoofer version)	DTB020000-0400	1	
-	GROUNDING, WIRE, UL1007, #18, YEL&GREEN, 120mm, A=OD8.0*ID4.2MM, B=STRIP, 5MM (Used on subwoofer version)	VWP070001-0010	1	3 ⚠
-	HEAT SHRINKABLE TUBE, ID50xL50mm, BLACK (Used on subwoofer version)	DTB050000-0500	1	3 ⚠
-	Heatsink B, AL6061, Temper-O, Nat, L131XW120XT2.5	GALA00606-0001	1	
-	Heatsink D, AL6061, Temper-O, Nat, L120XW74XT2.5	GALA00607-0001	1	
-	Heatsink G, AL6063, Natural, colo, L120XW50.4	GALA00608-0001	1	
-	Heatsink H, AL6063, Natural, colo, L80xW50.4	GALA00609-0001	1	
-	Heatsink I, AL6063, Natural, colo, L80XW50.4	GALA00610-0001	1	
-	L shape heatsink, Aluminum, 6061, L44XW24XH19	GALA00641-0001	1	
-	MH Amp Rear plate, AL5052, MH, L265.25XW145.25XT3 (Used on Mid/High version)	GALA00611-0001	1	
-	NUT, M3.0x0.5P, NICKEL PLATED STEEL	HNT009540-1230	4	
-	PUSH+LEVER SWITCH, RF-1003-BBC8E2L1C, 22.1*22.5*15MM (Used on subwoofer version)	MSWA09001-0010	1	
-	R shape heatsink, Aluminum, 6061, L44XW24XH19	GALA00641-0002	1	
-	S12 Washer, OD7*ID3.2*T0.45x UNFINISHED, S	HWSA17032-0045	18	
-	Screw, M2.6x0.45P, xL6, NICKEL, PLATE, Steel,PAN, HEAD, TYPE, B, FREARSON	HSPA53073-1060	3	
-	Screw, M3.0x0.5PxL10, Zinc+CED, Coating SUS, FLAT, HEAD, TYPE, B, HEXAGON, RECESS	HSFA53083-3100	7	
-	Screw, M3.0x0.5PxL15, Zinc+CED, COATING SUS, FLAT, HEAD, TYPE, B, FREARSON (Used on subwoofer version)	HSFA53083-3151	2	
-	SCREW, M3x0.5PxL8mm, NICKEL, PLATE,PAN HEAD	HSPA43083-1080	8	
-	SCREW, STEEL, C1018, M3.0*0.5P*L12, NICKEL,PAN HEAD, TYPE, B	HSPA43083-1120	16	

ELECTRICAL PART LIST

SMPS / Power Amplifier PCB Assembly

Miscellaneous (continued)

Reference Designator	Description	Vendor Part Number	Qty.	Note
-	SHRINKING TUBE, DIA=35, L=40mm, BLK,SA2420, SANYO (Used on subwoofer version)	DTB135000-0400	1	3
-	Silicon, Insulator, For, L30.7xW1	HISA00021-0001	1	
-	SILICON, INSULATOR, L105*W26.5*T0.2	HISA00012-0001	1	
-	SILICON, INSULATOR, L80*W26.5*T0.2, 5	HISA00013-0001	1	
-	SILICON, INSULATOR, L80*W26.5*T0.2, 6	HISA00014-0001	1	
-	Spacer, Support, PG:H-14, Nylon, 66(UL), H14XM3XW5.5	DSS100095-0001	1	
-	Star Washer, OD6.0xID3.3xH0.4x NICKEL PLA	HWSA56433-1050	18	
-	STRAND, WIRE, UL1617, 18AWG, BLUE, 100mm, A/B=STR, 5MM (Used on subwoofer version)	VWR0317BB-0100	1	
-	STRAND, WIRE, UL1617, 18AWG, BROWN, 100mm, A/B=STR, 5MM (Used on subwoofer version)	VWR0312BB-0100	1	
-	Subwoofer AMP Panel, Aluminum, 1050, bl, L261xW146xH14xT3 (Used on subwoofer version)	GALA00625-0001	1	
-	Support, Heatsink, PC, UL 94, V-0,L50xW25xH3	BPSA02080-0001	2	
-	Transistor Holder, PBT, TR-04H-PBW,L13xW10.1xH3.6	DHU201006-0001	12	
-	Transistor Holder, PG:TR-03P-PBT, UL, 94V-0,L14XW13XH4.8	DHU201005-0001	1	
-	U Heatsink, AL6061, Temper-O, Nat, L50.4xW27xH31.5	GALA00605-0001	1	

F1 Model 812 Input-Output / DSP PCB Assembly

Resistors

Reference Designator	Description	Vendor Part Number	Note
R1	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603	QCF011030-1001	
R2	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603	QCF011030-1001	
R3	GP, CHIP, RES, 2.2K OHM, 1/10W, 1%, 0603	QCF011030-2201	
R4	CHIP, RES, 270 OHM, 1/10W, 1%, 0603	QCF011030-2700	
R5	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R6	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R7	GP, CHIP, RES, 0 OHM, 1/10W, 5%, 0603	QCF015030-0000	
R8	CHIP, RES, 1.1K OHM, 1%, 1/10W, 0603	QCF011030-1101	
R9	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R10	GP, CHIP, RES, 0 OHM, 1/8W, 5%, 0805	QCF085020-0000	
R11	CHIP, RES, 1.1K OHM, 1%, 1/10W, 0603	QCF011030-1101	
R12	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R13	CHIP, RES, 20 OHM, 1%, 1/8W, 0805	QCF081020-2009	
R14	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R15	CHIP, RES, 20 OHM, 1%, 1/8W, 0805	QCF081020-2009	
R16	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R17	GP, CHIP, RES, 150 OHM, 1%, 1/10W, 0603	QCF011030-1500	
R18	GP, CHIP, RES, 150 OHM, 1%, 1/10W, 0603	QCF011030-1500	
R19	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R20	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R21	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R22	GP, CHIP, RES, 0 OHM, 1/10W, 5%, 0603	QCF015030-0000	

ELECTRICAL PART LIST

F1 Model 812 Input-Output / DSP PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R23	CHIP, RES, 20 OHM, 1%, 1/8W, 0805	QCF081020-2009	
R24	CHIP, RES, 20 OHM, 1%, 1/8W, 0805	QCF081020-2009	
R25	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R26	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R27	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603	QCF011030-1001	
R28	CHIP, RES, 270 OHM, 1/10W, 1%, 0603	QCF011030-2700	
R29	CHIP, RES, 270 OHM, 1/10W, 1%, 0603	QCF011030-2700	
R30	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R31	GP, CHIP, RES, 2K OHM, 1/10W, 1%, 0603	QCF011030-2001	
R32	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R33	GP, CHIP, RES, 1M OHM, 1%, 1/10W, 0603	QCF011030-1004	
R34	GP, CHIP, RES, 2K OHM, 1/10W, 1%, 0603	QCF011030-2001	
R35	GP, CHIP, RES, 470 OHM, 1/8W, 1%, 0805	QCF081020-4700	
R36	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603	QCF011030-1001	
R37	GP, CHIP, RES, 33K OHM, 1/10W, 1%, 0603	QCF011030-3302	
R38	GP, CHIP, RES, 12K OHM, 1%, 1/10W, 0603	QCF011030-1202	
R39	GP, CHIP, RES, 470 OHM, 1/8W, 1%, 0805	QCF081020-4700	
R40	CHIP, RES, 33.2K OHM, 1%, 1/10W, 0603	QCF011030-3322	
R41	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R42	GP, CHIP, RES, 0 OHM, 1/10W, 5%, 0603	QCF015030-0000	
R43	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R44	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R45	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R46	GP, CHIP, RES, 1.5K OHM, 1%, 1/10W, 0603	QCF011030-1501	
R47	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R48	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R49	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R50	GP, CHIP, RES, 2K OHM, 1/10W, 1%, 0603	QCF011030-2001	
R51	CHIP, RES, 14K OHM, 1%, 1/10W, 0603	QCF011030-1402	
R52	GP, CHIP, RES, 1/10W, 1%, 100 OHM, 0603	QCF011030-1000	
R53	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R54	GP, CHIP, RES, 5.1K OHM, 1%, 1/10W, 0603	QCF011030-5101	
R55	CHIP, RES, 33.2K OHM, 1%, 1/10W, 0603	QCF011030-3322	
R56	GP, CHIP, RES, 2K OHM, 1/10W, 1%, 0603	QCF011030-2001	
R57	GP, CHIP, RES, 5.1K OHM, 1%, 1/10W, 0603	QCF011030-5101	
R58	GP, CHIP, RES, 5.1K OHM, 1%, 1/10W, 0603	QCF011030-5101	
R59	GP, CHIP, RES, 1/10W, 1%, 100 OHM, 0603	QCF011030-1000	
R60	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R61	CHIP, RES., 51 OHM, 1%, 1/10W, 0603	QCF011030-5109	
R62	CHIP, RES., 51 OHM, 1%, 1/10W, 0603	QCF011030-5109	
R63	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R64	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R65	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R66	CHIP, RES., 470 OHM, 1/10W, 1%, 0603	QCF011030-4700	
R67	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R68	GP, CHIP, RES, 18K OHM, 1/10W, 1%, 0603	QCF011030-1802	
R69	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R70	GP, CHIP, RES, 1M OHM, 1%, 1/10W, 0603	QCF011030-1004	
R71	GP, CHIP, RES., 75 OHM, 1/10W, 1%, 0603	QCF011030-7509	
R72	CHIP, RES, 3.9K OHM, 1/10W, 1%, 0603	QCF011030-3901	
R73	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R74	GP, CHIP, RES, 4.7K OHM, 1/10W, 1%, 0603	QCF011030-4701	

ELECTRICAL PART LIST

F1 Model 812 Input-Output / DSP PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R75	GP, CHIP, RES, 2.4K OHM, 1/10W, 1%, 0603	QCF011030-2401	
R76	CHIP, RES, 3.9K OHM, 1/10W, 1%, 0603	QCF011030-3901	
R77	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R78	GP, CHIP, RES, 2.2K OHM, 1/10W, 1%, 0603	QCF011030-2201	
R79	GP, CHIP, RES., 75 OHM, 1/10W, 1%, 0603	QCF011030-7509	
R80	GP, CHIP, RES, 2.2K OHM, 1/10W, 1%, 0603	QCF011030-2201	
R81	GP, CHIP, RES, 2.4K OHM, 1/10W, 1%, 0603	QCF011030-2401	
R82	GP, CHIP, RES, 2.2K OHM, 1/10W, 1%, 0603	QCF011030-2201	
R83	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R84	GP, CHIP, RES., 75 OHM, 1/10W, 1%, 0603	QCF011030-7509	
R85	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R86	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R87	CHIP, RES, 3.9K OHM, 1/10W, 1%, 0603	QCF011030-3901	
R88	GP, CHIP, RES, 2.4K OHM, 1/10W, 1%, 0603	QCF011030-2401	
R89	GP, CHIP, RES, 0 OHM, 1/8W, 5%, 0805	QCF085020-0000	
R90	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R91	CHIP, RES, 330K OHM, 1/10W, 1%, 0603	QCF011030-3303	
R92	CHIP, RES, 1.3K OHM, 1%, 1/10W, 0603	QCF011030-1301	
R93	GP, CHIP, RES, 15K OHM, 1%, 1/10W, 0603	QCF011030-1502	
R94	CHIP, RES, 51K OHM, 1/10W, 1%, 0603	QCF011030-5102	
R95	GP, CHIP, RES, 200 OHM, 1/8W, 1%, 0805	QCF081020-2000	
R96	GP, CHIP, RES, 1K OHM, 1/8W, 1%, 0805	QCF081020-1001	
R97	GP, CHIP, RES, 5.1K OHM, 1%, 1/10W, 0603	QCF011030-5101	
R98	GP, CHIP, RES, 5.1K OHM, 1%, 1/10W, 0603	QCF011030-5101	
R99	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R100	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R101	GP, CHIP, RES, 20K OHM, 1/10W, 1%, 0603	QCF011030-2002	
R102	GP, CHIP, RES, 200 OHM, 1/8W, 1%, 0805	QCF081020-2000	
R103	GP, CHIP, RES, 1K OHM, 1/8W, 1%, 0805	QCF081020-1001	
R104	GP, CHIP, RES, 5.1K OHM, 1%, 1/10W, 0603	QCF011030-5101	
R105	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603	QCF011030-1001	
R106	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603	QCF011030-1001	
R107	GP, CHIP, RES, 5.1K OHM, 1%, 1/10W, 0603	QCF011030-5101	
R108	GP, CHIP, RES, 1.5K OHM, 1%, 1/10W, 0603	QCF011030-1501	
R109	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R110	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R111	GP, CHIP, RES, 2.2K OHM, 1/8W, 5%, 0805	QCF085020-2220	
R112	GP, CHIP, RES, 0 OHM, 1/10W, 5%, 0603	QCF015030-0000	
R113	GP, CHIP, RES, 5.1K OHM, 1%, 1/10W, 0603	QCF011030-5101	
R114	GP, CHIP, RES, 2.2K OHM, 1/8W, 5%, 0805	QCF085020-2220	
R115	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603	QCF011030-1001	
R116	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R117	GP, CHIP, RES, 1.5K OHM, 1%, 1/10W, 0603	QCF011030-1501	
R118	GP, CHIP, RES, 1/10W, 1%, 100 OHM, 0603	QCF011030-1000	
R119	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R120	GP, CHIP, RES, 200 OHM, 1/8W, 1%, 0805	QCF081020-2000	
R121	CHIP, RES, 270 OHM, 1/10W, 1%, 0603	QCF011030-2700	
R122	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R123	GP, CHIP, RES, 1M OHM, 1%, 1/10W, 0603	QCF011030-1004	
R124	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R125	GP, CHIP, RES, 2K OHM, 1/10W, 1%, 0603	QCF011030-2001	
R126	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	

ELECTRICAL PART LIST

F1 Model 812 Input-Output / DSP PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R127	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R128	GP, CHIP, RES, 100 OHM, 1/8W, 1%, 0805	QCF081020-1000	
R129	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R130	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R131	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R132	GP, CHIP, RES, 100 OHM, 1/8W, 1%, 0805	QCF081020-1000	
R133	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R134	GP, CHIP, RES, 0 OHM, 1/8W, 5%, 0805	QCF085020-0000	
R135	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R136	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R137	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R138	GP, CHIP, RES., 75 OHM, 1/10W, 1%, 0603	QCF011030-7509	
R139	CHIP, RES, 3.9K OHM, 1/10W, 1%, 0603	QCF011030-3901	
R140	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603	QCF011030-1001	
R141	GP, CHIP, RES, 10 OHM, 1%, 1/10W, 0603	QCF011030-1009	
R142	GP, CHIP, RES, 10 OHM, 1%, 1/10W, 0603	QCF011030-1009	
R143	GP, CHIP, RES, 10 OHM, 1%, 1/10W, 0603	QCF011030-1009	
R144	GP, CHIP, RES, 10 OHM, 1%, 1/10W, 0603	QCF011030-1009	
R145	GP, CHIP, RES, 10 OHM, 1%, 1/10W, 0603	QCF011030-1009	
R146	GP, CHIP, RES, 10 OHM, 1%, 1/10W, 0603	QCF011030-1009	
R147	GP, CHIP, RES, 1.2K, OHM, 1%, 1/10W, 0603	QCF011030-1201	
R148	GP, CHIP, RES, 3.6K OHM, 1/10W, 1%, 0603	QCF011030-3601	
R149	GP, CHIP, RES, 1M OHM, 1%, 1/10W, 0603	QCF011030-1004	
R150	GP, CHIP, RES, 1M OHM, 1%, 1/10W, 0603	QCF011030-1004	
R151	CHIP, RES, 3.9K OHM, 1/10W, 1%, 0603	QCF011030-3901	
R152	GP, CHIP, RES, 5.1K OHM, 1%, 1/10W, 0603	QCF011030-5101	
R153	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R154	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R155	GP, CHIP, RES, 5.1K OHM, 1%, 1/10W, 0603	QCF011030-5101	
R156	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R157	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R158	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R159	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R160	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R161	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R162	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R163	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R164	GP, CHIP, RES, 1M OHM, 1%, 1/10W, 0603	QCF011030-1004	
R165	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R166	GP, CHIP, RES, 2.4K OHM, 1/10W, 1%, 0603	QCF011030-2401	
R167	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R168	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R169	CHIP, RES, 3.9K OHM, 1/10W, 1%, 0603	QCF011030-3901	
R170	GP, CHIP, RES, 2.4K OHM, 1/10W, 1%, 0603	QCF011030-2401	
R171	CHIP, RES, 3.9K OHM, 1/10W, 1%, 0603	QCF011030-3901	
R172	GP, CHIP, RES, 2.4K OHM, 1/10W, 1%, 0603	QCF011030-2401	
R173	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R174	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R175	CHIP, RES, 3.9K OHM, 1/10W, 1%, 0603	QCF011030-3901	
R176	GP, CHIP, RES, 2.4K OHM, 1/10W, 1%, 0603	QCF011030-2401	
R177	CHIP, RES, 3.9K OHM, 1/10W, 1%, 0603	QCF011030-3901	
R178	GP, CHIP, RES, 2.4K OHM, 1/10W, 1%, 0603	QCF011030-2401	

ELECTRICAL PART LIST

F1 Model 812 Input-Output / DSP PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R179	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R180	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R181	GP, CHIP, RES, 20K OHM, 1/10W, 1%, 0603	QCF011030-2002	
R182	GP, CHIP, RES, 20K OHM, 1/10W, 1%, 0603	QCF011030-2002	
R183	GP, CHIP, RES, 0 OHM, 1/10W, 5%, 0603	QCF015030-0000	
R184	CHIP, RES, 330K OHM, 1/10W, 1%, 0603	QCF011030-3303	
R185	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R186	GP, CHIP, RES, 1M OHM, 1%, 1/10W, 0603	QCF011030-1004	
R187	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R188	CHIP, RES, 330K OHM, 1/10W, 1%, 0603	QCF011030-3303	
R189	GP, CHIP, RES, 1M OHM, 1%, 1/10W, 0603	QCF011030-1004	
R190	GP, CHIP, RES, 560K OHM, 1/10W, 1%, 0603	QCF011030-5603	
R191	GP, CHIP, RES, 1M OHM, 1%, 1/10W, 0603	QCF011030-1004	
R192	GP, CHIP, RES, 1M OHM, 1%, 1/10W, 0603	QCF011030-1004	
R193	GP, CHIP, RES, 1M OHM, 1%, 1/10W, 0603	QCF011030-1004	
R194	GP, CHIP, RES, 1M OHM, 1%, 1/10W, 0603	QCF011030-1004	
R195	GP, CHIP, RES, 1M OHM, 1%, 1/10W, 0603	QCF011030-1004	
R198	CHIP, RES, 330K OHM, 1/10W, 1%, 0603	QCF011030-3303	
R199	CHIP, RES, 330K OHM, 1/10W, 1%, 0603	QCF011030-3303	

Capacitors

Reference Designator	Description	Vendor Part Number	Note
C1	CAP, ELECT, 220uF, 16V, 20%, 105', 6.3x11mm	PLE099540-2210	
C2	CAP, ELECT, 470uF, 25V, 20%, 8x14mm, P=3.5mm, D10MM, -25'C+105'C, 3.5MM	PVE099550-4710	
C3	CHIP, CAP, 33pF, 50V, 5%, 0603, TYPE NPO	PXL410370-3300	
C4	CHIP, CAP, 15pF, 50V, 5%, 0603, NPO	PXL410370-1500	
C5	GP, CHIP, CAP, 470pF, 50V, 5%, 0603, NPO	PXL410370-4710	
C6	GP, CHIP, CAP, 100pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1010	
C7	GP, CHIP, CAP, 100pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1010	
C8	GP, CHIP, CAP, 470pF, 50V, 5%, 0603, NPO	PXL410370-4710	
C9	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C10	GP, CHIP, CAP, 470pF, 50V, 5%, 0603, NPO	PXL410370-4710	
C11	GP, CHIP, CAP, 470pF, 50V, 5%, 0603, NPO	PXL410370-4710	
C12	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C13	GP, CHIP, CAP, 470pF, 50V, 5%, 0603, NPO	PXL410370-4710	
C14	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C15	CHIP, CAP, 18pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1800	
C16	CAP, ELECT, 220uF, 16V, 20%, 105', 6.3x11mm	PLE099540-2210	
C17	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C18	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C19	GP, CHIP, CAP, 100pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1010	
C20	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C21	CHIP, CAP, 33pF, 50V, 5%, 0603, TYPE NPO	PXL410370-3300	
C22	CHIP, CAP, 33pF, 50V, 5%, 0603, TYPE NPO	PXL410370-3300	
C23	CAP, MINIT, ELECT, 100uF, 35V, 20%, 105', 8x7, P=3.5, LOW ESR	PLE999560-1010	

ELECTRICAL PART LIST

F1 Model 812 Input-Output / DSP PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C24	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C25	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C26	CHIP, CAP, 33pF, 50V, 5%, 0603, TYPE NPO	PXL410370-3300	
C27	CHIP, CAP, 18pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1800	
C28	CAP, ELECT, 10uF, 50V, 20%, 105', 5x11mm,P=2.5, A/I	PME099570-1000	
C29	GP, CHIP, CAP, 470pF, 50V, 5%, 0603, NPO	PXL410370-4710	
C30	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C31	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C32	GP, CHIP, CAP, 100pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1010	
C33	CHIP, CAP, 0.22uF, 50V, 10%, 0603, X7R	PXL456470-2240	
C34	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C35	CHIP, CAP, 33pF, 50V, 5%, 0603, TYPE NPO	PXL410370-3300	
C36	CHIP, CAP, 33pF, 50V, 5%, 0603, TYPE NPO	PXL410370-3300	
C37	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C38	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C39	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C40	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C41	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C42	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C43	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C44	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C45	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C46	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C47	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C48	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C49	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C50	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C51	CHIP, CAP, 10uF, 16V, 10%, 0805, X7R	PYL456440-1060	
C52	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C53	CAP, ELECT, 47uF, 16V, 20%, 105'C, 5x11xP2	PLE099542-4700	
C54	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C55	CAP, ELECT, 47uF, 16V, 20%, 105'C, 5x11xP2	PLE099542-4700	
C56	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C57	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C58	CHIP, CAP, 1uF, 10V, 10%, 0603, TYPE X7R	PXL456430-1050	
C59	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C60	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C61	CHIP, CAP, 10uF, 6.3V, 10%, 0805, X7R	PYL456420-1060	
C62	GP, CHIP, CAP, 3.3nF, 50V, 10%, 0603, X7R	PXL456470-3320	
C63	GP, CHIP, CAP, 56nF, 50V, 10%, 0603, , X7R	PXL456470-5630	
C64	GP, CHIP, CAP, 22pF, 50V, 5%, 0603, TYPE NPO	PXL410370-2200	
C65	GP, CHIP, CAP, 680pF, 50V, 5%, 0603, NPO	PXL410370-6810	
C66	GP, CHIP, CAP, 22pF, 50V, 5%, 0603, TYPE NPO	PXL410370-2200	
C67	CHIP, CAP, 390pF, 50V, 10%, 0603, X7R	PXL456470-3910	
C68	CHIP, CAP, 10uF, 16V, 10%, 0805, X7R	PYL456440-1060	
C69	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C70	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C71	CAP, ELECT, 20%, 25V, 100uF, Loud, L=3.5mm,105'	PVE099550-1010	
C72	GP, CHIP, CAP, 820pF, 50V, 5%, 0603, TYPE NPO	PXL410370-8210	

ELECTRICAL PART LIST

F1 Model 812 Input-Output / DSP PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C73	CAP, ELECT, 47uF, 16V, 20%, 105'C, 5x11xP2	PLE099542-4700	
C74	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C75	CHIP, CAP, 10uF, 16V, 10%, 0805, X7R	PYL456440-1060	
C76	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C77	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C78	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C79	CAP, MINIT, ELECT, 100uF, 35V, 20%, 105', 8x7, P=3.5, LOW ESR	PLE999560-1010	
C80	CAP, ELECT, 47uF, 16V, 20%, 105'C, 5x11xP2	PLE099542-4700	
C81	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C82	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C83	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C84	CAP, ELECT, 220uF, 25V, 20%, 8x12x4mm, 105'C, AI-RADIAL	PME099550-2210	
C85	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C86	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C87	CHIP, CAP, 10uF, 16V, 10%, 0805, X7R	PYL456440-1060	
C88	CAP, ELECT, 470uF, 25V, 20%, 8x14mm, P=3.5mm, D10MM, -25'C+105'C, 3.5MM	PVE099550-4710	
C89	CHIP, CAP, 10uF, 16V, 10%, 0805, X7R	PYL456440-1060	
C90	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C91	CAP, ELECT, 470uF, 25V, 20%, 8x14mm, P=3.5mm, D10MM, -25'C+105'C, 3.5MM	PVE099550-4710	
C92	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C93	CAP, ELECT, 220uF, 25V, 20%, 8x12x4mm, 105'C, AI-RADIAL	PME099550-2210	
C94	GP, CHIP, CAP, 68pF, 50V, 5%, 0603, TYPE NPO	PXL410370-6800	
C95	GP, CHIP, CAP, 1800pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1820	
C96	GP, CHIP, CAP, 0.015uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1530	
C97	CHIP, CAP, 390pF, 50V, 10%, 0603, X7R	PXL456470-3910	
C98	GP, CHIP, CAP, 680pF, 50V, 5%, 0603, NPO	PXL410370-6810	
C99	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C100	GP, CHIP, CAP, 680pF, 50V, 5%, 0603, NPO	PXL410370-6810	
C101	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C102	CAP, ELECT, 47uF, 16V, 20%, 105'C, 5x11xP2	PLE099542-4700	
C103	CHIP, CAP, 10uF, 16V, 10%, 0805, X7R	PYL456440-1060	
C104	CAP, ELECT, 47uF, 16V, 20%, 105'C, 5x11xP2	PLE099542-4700	
C105	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C106	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C107	CHIP, CAP, 10uF, 16V, 10%, 0805, X7R	PYL456440-1060	
C108	CAP, ELECT, 47uF, 16V, 20%, 105'C, 5x11xP2	PLE099542-4700	
C109	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C110	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C111	CHIP, CAP, 1uF, 10V, 10%, 0603, TYPE X7R	PXL456430-1050	
C112	CHIP, CAP, 33pF, 50V, 5%, 0603, TYPE NPO	PXL410370-3300	
C113	GP, CHIP, CAP, 470pF, 50V, 5%, 0603, NPO	PXL410370-4710	
C114	GP, CHIP, CAP, 470pF, 50V, 5%, 0603, NPO	PXL410370-4710	
C115	CHIP, CAP, 33pF, 50V, 5%, 0603, TYPE NPO	PXL410370-3300	
C116	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	

ELECTRICAL PART LIST

F1 Model 812 Input-Output / DSP PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C117	CAP, MINIT, ELECT, 100uF, 35V, 20%, 105', 8x7, P=3.5, LOW ESR	PLE999560-1010	
C118	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C119	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C120	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C121	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C122	CHIP, CAP, 1uF, 25V, 10%, 0603, TYPE X7R	PXL456450-1050	
C123	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C124	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C125	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C126	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C127	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C128,	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C129	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C130	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C131	CHIP, CAP, 10uF, 16V, 10%, 0805, X7R	PYL456440-1060	
C132	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C133	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C134	CHIP, CAP, 4.7uF, 16V, 10%, 0805, TYPE X7R	PYL456440-4750	
C135	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C136	GP, CHIP, CAP, 820pF, 50V, 5%, 0603, TYPE NPO	PXL410370-8210	
C137	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C138	GP, CHIP, CAP, 680pF, 50V, 5%, 0603, NPO	PXL410370-6810	
C139	GP, CHIP, CAP, 680pF, 50V, 5%, 0603, NPO	PXL410370-6810	
C140	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C141	GP, CHIP, CAP, 820pF, 50V, 5%, 0603, TYPE NPO	PXL410370-8210	
C142	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C143	GP, CHIP, CAP, 680pF, 50V, 5%, 0603, NPO	PXL410370-6810	
C144	GP, CHIP, CAP, 680pF, 50V, 5%, 0603, NPO	PXL410370-6810	
C145	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C146	GP, CHIP, CAP, 820pF, 50V, 5%, 0603, TYPE NPO	PXL410370-8210	
C147	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C148	GP, CHIP, CAP, 680pF, 50V, 5%, 0603, NPO	PXL410370-6810	
C149	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C150	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C151	GP, CHIP, CAP, 56nF, 50V, 10%, 0603, , X7R	PXL456470-5630	
C152	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C153	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C154	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C155	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C156	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C157	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C158	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	

ELECTRICAL PART LIST

F1 Model 812 Input-Output / DSP PCB Assembly

Inductors and Ferrite Beads

Reference Designator	Description	Vendor Part Number	Note
B1	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0805, DCR0.25 OHM, I>1500MA, IDC=20	SCBA08051-6010	
B2	GP, CHIP, RES, 0 OHM, 1/8W, 5%, 0805	QCF085020-0000	
B3	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0805, DCR0.25 OHM, I>1500MA, IDC=20	SCBA08051-6010	
B4	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0805, DCR0.25 OHM, I>1500MA, IDC=20	SCBA08051-6010	
B5	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0805, DCR0.25 OHM, I>1500MA, IDC=20	SCBA08051-6010	
B6	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0805, DCR0.25 OHM, I>1500MA, IDC=20	SCBA08051-6010	
B7	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0805, DCR0.25 OHM, I>1500MA, IDC=20	SCBA08051-6010	
B10	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0805, DCR0.25 OHM, I>1500MA, IDC=20	SCBA08051-6010	
L1	SMD INDUCTOR, 3.3uH, 5A, 20%, GPSR0730-3R3M, 7.2*6.6*3.0MM, GANTONG	SCNA31705-3310	
L2	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0603, DCR0.4, OHM, I>1000MA	SCBA06031-6010	
L3	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0603, DCR0.4, OHM, I>1000MA	SCBA06031-6010	
L4	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0603, DCR0.4, OHM, I>1000MA	SCBA06031-6010	
L5	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0603, DCR0.4, OHM, I>1000MA	SCBA06031-6010	
L6	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0603, DCR0.4, OHM, I>1000MA	SCBA06031-6010	
L7	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0603, DCR0.4, OHM, I>1000MA	SCBA06031-6010	
L8	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0603, DCR0.4, OHM, I>1000MA	SCBA06031-6010	
L9	CHIP, BEAD, 1100 OHM, 25%, HZ0603B112R-10	SCBA06031-1120	
L10	CHIP, BEAD, 1100 OHM, 25%, HZ0603B112R-10	SCBA06031-1120	
L20	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0603, DCR0.4, OHM, I>1000MA	SCBA06031-6010	
L21	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0603, DCR0.4, OHM, I>1000MA	SCBA06031-6010	

Diodes

Reference Designator	Description	Vendor Part Number	Note
D1	SMD, Diode, SOD-323, 1SS355, 0.1A, 80V	RCD113550-0010	
D2	SMD, Diode, SOD-323, 1SS355, 0.1A, 80V	RCD113550-0010	
D3	GP, DIODE, SW, LL4148, TELEFUNKEN, SOD80, SMT TYPE	RCD104148-1010	
D4	GP, DIODE, SW, LL4148, TELEFUNKEN, SOD80, SMT TYPE	RCD104148-1010	
D5	SCHOTTKY, DIODE, SK32, SMC, DO-214AB	RCD100032-0010	
D6	SMD, LED, 2.0x1.25mm, MS-PTB2012CURSGAC, RED/GREEN	KCD250001-0010	
D7	SMD, LED, 2.0x1.25mm, MS-PTB2012CURSGAC, RED/GREEN	KCD250001-0010	

ELECTRICAL PART LIST

F1 Model 812 Input-Output / DSP PCB Assembly

Diodes (continued)

Reference Designator	Description	Vendor Part Number	Note
D8	SMD, LED, RED/BLUE, MS-PTB2012CURSBAC, 2.0X1.25MM	KCD260004-0010	
D9	GP, DIODE, SW, LL4148, TELEFUNKEN, SOD80, SMT TYPE	RCD104148-1010	
D10	SMD, LED, H-0805AA22E008-01, AMBER, 0805, 600-608NM	KCD300805-0020	
D12	GP, DIODE, SW, LL4148, TELEFUNKEN, SOD80, SMT TYPE	RCD104148-1010	
D14	GP, DIODE, SW, LL4148, TELEFUNKEN, SOD80, SMT TYPE	RCD104148-1010	
D15	DIODES, BAT54S-7-F, SOT-23	RCD100540-0010	
D17	DIODE, SW, BAV99, DIODES, INC, SOT-23, 3PIN, SMT TYPE	RCD100099-0010	
D18	DIODE, SW, BAV99, DIODES, INC, SOT-23, 3PIN, SMT TYPE	RCD100099-0010	
D19	DIODE, SW, BAV99, DIODES, INC, SOT-23, 3PIN, SMT TYPE	RCD100099-0010	
D20	DIODE, SW, BAV99, DIODES, INC, SOT-23, 3PIN, SMT TYPE	RCD100099-0010	
D22	DIODE, SW, BAV99, DIODES, INC, SOT-23, 3PIN, SMT TYPE	RCD100099-0010	
D23	DIODE, SW, BAV99, DIODES, INC, SOT-23, 3PIN, SMT TYPE	RCD100099-0010	
D24	DIODE, SW, BAV99, DIODES, INC, SOT-23, 3PIN, SMT TYPE	RCD100099-0010	
D29	GP, DIODE, SW, LL4148, TELEFUNKEN, SOD80, SMT TYPE	RCD104148-1010	
D30	GP, DIODE, SW, LL4148, TELEFUNKEN, SOD80, SMT TYPE	RCD104148-1010	

Transistors

Reference Designator	Description	Vendor Part Number	Note
Q1	XISTR, PNP, MMBT4403, SOT-23,PNP, GENERAL PURPOSE AMPLIFIER	RCP004403-0001	
Q2	XISTR, PNP, MMBT4403, SOT-23,PNP, GENERAL PURPOSE AMPLIFIER	RCP004403-0001	
Q3	XISTR, PNP, MMBT4403, SOT-23,PNP, GENERAL PURPOSE AMPLIFIER	RCP004403-0001	
Q4	XISTR, PNP, MMBT4403, SOT-23,PNP, GENERAL PURPOSE AMPLIFIER	RCP004403-0001	
Q5	XISTR, PNP, MMBT4403, SOT-23,PNP, GENERAL PURPOSE AMPLIFIER	RCP004403-0001	
Q6	XISTR, PNP, MMBT4403, SOT-23,PNP, GENERAL PURPOSE AMPLIFIER	RCP004403-0001	
Q7	XISTR, PNP, MMBT4403, SOT-23,PNP, GENERAL PURPOSE AMPLIFIER	RCP004403-0001	
Q8	XISTR, PNP, MMBT4403, SOT-23,PNP, GENERAL PURPOSE AMPLIFIER	RCP004403-0001	
Q9	CHIP, NPN, SOT23, MMBT4401, GP, AMP, 4300310, FAIRCHILD	RCN004401-0002	
Q10	CHIP, NPN, SOT23, MMBT4401, GP, AMP, 4300310, FAIRCHILD	RCN004401-0002	

ELECTRICAL PART LIST

F1 Model 812 Input-Output / DSP PCB Assembly

Transistors (continued)

Reference Designator	Description	Vendor Part Number	Note
Q11	XISTR, PNP, KST92, , SOT-23,TRANSISTOR	RCP000092-0001	
Q12	XISTR, NPN, MMBT3904, SOT-23, LRC, GENERAL PURPOSE AMPLIFIER	RCN003904-0008	
Q13	XISTR, NPN, MMBT3904, SOT-23, LRC, GENERAL PURPOSE AMPLIFIER	RCN003904-0008	
Q14	XISTR, NPN, MMBT3904, SOT-23, LRC, GENERAL PURPOSE AMPLIFIER	RCN003904-0008	
Q15	COMPOSITE TRANSISTOR, SOT-363, MMDT4413	RCC004413-0010	
Q16	COMPOSITE TRANSISTOR, SOT-363, MMDT4413	RCC004413-0010	
Q17	XISTR, NPN, MMBT3904, SOT-23, LRC, GENERAL PURPOSE AMPLIFIER	RCN003904-0008	
Q18	XISTR, NPN, MMBT3904, SOT-23, LRC, GENERAL PURPOSE AMPLIFIER	RCN003904-0008	
Q19	CHIP, MOSFET, 2N7002, SOT-23, N-CHANNEL	RCM207002-1001	
Q20	CHIP, MOSFET, 2N7002, SOT-23, N-CHANNEL	RCM207002-1001	
Q21	XISTR, NPN, MMBT3904, SOT-23, LRC, GENERAL PURPOSE AMPLIFIER	RCN003904-0008	
Q22	SMD, MOSFET, N-CH, SOT-363, 2N7002DW, FAIRCHILD	RCM027002-1001	
Q23	SMD, MOSFET, N-CH, SOT-363, 2N7002DW, FAIRCHILD	RCM027002-1001	
Q24	SMD, MOSFET, N-CH, SOT-363, 2N7002DW, FAIRCHILD	RCM027002-1001	
Q25	SMD, MOSFET, N-CH, SOT-363, 2N7002DW, FAIRCHILD	RCM027002-1001	
Q26	CHIP, XISTR, 3P, PNP, MMBT3906, PNP, SOT23	RCP003906-0002	
Q27	SMD, MOSFET, N-CH, SOT-363, 2N7002DW, FAIRCHILD	RCM027002-1001	
Q28	COMPOSITE TRANSISTOR, SOT-363, MMDT4413	RCC004413-0010	
Q29	COMPOSITE TRANSISTOR, SOT-363, MMDT4413	RCC004413-0010	
Q30	CHIP, MOSFET, 2N7002, SOT-23, N-CHANNEL	RCM207002-1001	
Q31	CHIP, MOSFET, 2N7002, SOT-23, N-CHANNEL	RCM207002-1001	
Q32	XISTR, NPN, MMBT3904, SOT-23, LRC, GENERAL PURPOSE AMPLIFIER	RCN003904-0008	
Q33	XISTR, NPN, MMBT3904, SOT-23, LRC, GENERAL PURPOSE AMPLIFIER	RCN003904-0008	
Q34	XISTR, NPN, MMBT3904, SOT-23, LRC, GENERAL PURPOSE AMPLIFIER	RCN003904-0008	
Q35	CHIP, XISTR, 3P, PNP, MMBT3906, PNP, SOT23	RCP003906-0002	
Q36	XISTR, NPN, MMBT3904, SOT-23, LRC, GENERAL PURPOSE AMPLIFIER	RCN003904-0008	
Q37	XISTR, NPN, MMBT3904, SOT-23, LRC, GENERAL PURPOSE AMPLIFIER	RCN003904-0008	
Q38	CHIP, MOSFET, 2N7002, SOT-23, N-CHANNEL	RCM207002-1001	
Q39	CHIP, MOSFET, 2N7002, SOT-23, N-CHANNEL	RCM207002-1001	
Q40	CHIP, MOSFET, 2N7002, SOT-23, N-CHANNEL	RCM207002-1001	
Q41	CHIP, MOSFET, 2N7002, SOT-23, N-CHANNEL	RCM207002-1001	
Q42	CHIP, MOSFET, 2N7002, SOT-23, N-CHANNEL	RCM207002-1001	
Q43	CHIP, MOSFET, 2N7002, SOT-23, N-CHANNEL	RCM207002-1001	
Q44	CHIP, MOSFET, 2N7002, SOT-23, N-CHANNEL	RCM207002-1001	

ELECTRICAL PART LIST

F1 Model 812 Input-Output / DSP PCB Assembly

Integrated Circuits

Reference Designator	Description	Vendor Part Number	Note
IC1	DC-DC CONVERTER, TI, TPS54331DR, SOIC8	RCI054331-0001	
U1	IC, OP AMP, DUAL, 8P, SO-8, NJM2068	RCI002068-0001	
U2	IC, OP AMP, DUAL, 8P, SO-8, NJM2068	RCI002068-0001	
U3	IC, OP AMP, DUAL, 8P, SO-8, NJM4580	RCI004580-0001	
U4	IC, OP AMP, DUAL, 8P, SO-8, NJM4580	RCI004580-0001	
U5	IC, OP AMP, DUAL, 8P, SO-8, NJM4580	RCI004580-0001	
U6	IC, OP AMP, DUAL, 8P, SO-8, NJM4580	RCI004580-0001	
U7	IC, OP AMP, DUAL, 8P, SO-8, NJM2068	RCI002068-0001	
U8	IC, CODEC, 28P, TSSOP, CS4272, 24-BIT, 192 KHZ, STEREO AUDIO	RCI004272-0001	
U9	GP, IC, 48P, ADAU1701JSTZ-RL, DSP, LQFP48, 3910920, ANALOG DEVICES	RCI001701-0001	
U10	IC, SO8-W, AT24C64D, 1.7V?5.5V, Atmel, EEPROM, 64K	RCI002464-0001	
U11	IC, MPU, SUPERVISORY, SOT23, MAX809, 2.93V	RCI000809-0001	
U12	IC, REGULATOR, ST, L7815CV, 1A, TO-220	RHI007815-1001	
U13	GP, IC, 3P, UTC, LD1117AL-3.3,1A, LOW, DROPOUT, POSITIVE, VOL	RCI111733-1102	
U14	IC, REGULATOR, ST, L7915CV, 1A, TO-220	RHI007915-1001	
U15	IC, OP AMP, DUAL, 8P, SO-8, NJM4580	RCI004580-0001	
U16	IC, 3P, UTC, LD1117AL-5.0, SOT-223,800MA, LOW-DROPOUT REGULATOR	RCI111750-0001	

Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
CON1	XLR Connectors, 6P, NCJ6FAV-0, 25*25*24MM	CJDA06401-1010	
CON2	6.35mm, Switched, Jack, Socket, Plastic, BLK,M9.4, X, 0.75, X, 23MM	CJMA63502-4010	
CON3	RCA JACK, 3P, RED/WHITE, AV2-8.4-23A, STAND NICKEL	CJRA02401-0010	
CON4	XLR Connectors, 3P, NC3MAAV, 19.8*9.8*24MM	CJDA03401-1010	
J1	CONNECTOR, 3 PIN, P=2.5, White, 90', Normal	CCN250000-0503	
J2	CONN, 6 PIN, P=2.5, RED, 90', Normal	CCN250010-0506	
J3	CONNECTOR, 10 PIN, P=2.5, White, 90', Normal	CCN250000-0510	
SW1	SLIDE SWITCH, 2P/2T, SS-22F20, 17*7.5MM	MSWA04018-0010	
SW2	SLIDE SWITCH, 2P/2T, SS-22F20, 17*7.5MM	MSWA04018-0010	
SW3	SLIDE SWITCH, 2P/3T, SS-23E03, 20*9.3MM	MSWA04017-0010	
SW4	SMD, TACT SWITCH, SOY-164BST	MCWA06011-0010	
VR1	POT, ROTARY, 25MM, RV110CF-40-25A-10A10K-0C, 12 O'CLOCK POSITION DETENT, WITH, SC	MVRA02308-1031	
VR2	POT, ROTARY, 10KCX2, RV112BCF-40-25A-10C10K-0C, 12 O'CLOCK POSITION DETENT, WITH SC	MVRA02304-1031	
Y1	CRYSTAL, CITIZEN: CM309S24.576MABJTR, 30ppm, 24.576MHZ, L12.5XW4.6XH3.7MM	JCQ003001-2461	
-	AC POWER JACK, BLACK, JR-101, 50*21.9mm	CJPA11002-0010	3 ⚠

ELECTRICAL PART LIST

F1 Model 812 Input-Output / DSP PCB Assembly

Miscellaneous (continued)

Reference Designator	Description	Vendor Part Number	Note
-	KNOB, VOLUME, TPE, natural black, H19xOD12	BPKA05082-0001	
-	SLIDE, SWITCH CAP, ABS, Kingfa, GAR, L20xW19xH9	BPOA00090-0001	
-	PUSH+LEVER, SWITCH, RF-1003-BBC8E2L1C,22.1*22.5*15MM	MSWA09001-0010	3 ⚠
-	LIGHT GUIDE, LED/I/O, PC+5%, TiO, L29.6xW16.8xH7.3	BPSA02086-0001	
-	DOUBLE SIDED TAPE, W10mmxL50M/RL, WHITE, T4000	XAD050010-0001	
-	MH DSP REAR PLATE, AL1015, L200.24XW145.25XT2.5	GALA00612-0001	
-	PC Sheet, Black, L5.4XW3.8XT0.8MM, ADHESIVE, DS11	IVHA15099-0001	
-	Gasket 2, For DSP, MH, EVA, 38−, 2,L135.3xW11xT2	IVEA00775-0001	
-	Gasket 3, 38 degree, Natural Black, L143.2xW19xT2	IVEA00693-0002	
-	Gasket, EVA, 38 degree, Natural black, L174.5xW7.9xT2	IVEA00697-0001	
-	Gasket, EVA, 38 degree, Natural Black, L5.4XW3.8XT2.0, ADHESIVE, DS11	IVEA00887-0001	
-	GROUNDING WIRE, UL1007#18, YEL&GREEN, 120mm, A=OD8.0*ID4.2MM,B=STRIP, 5MM	VWP070001-0010	3 ⚠
-	STRAND WIRE, UL1617, 18AWG, BLUE, 100mm, A/B=STR, 5MM	VWR0317BB-0100	3 ⚠
-	STRAND WIRE, UL1617, 18AWG, BROWN, 100mm, A/B=STR, 5MM	VWR0312BB-0100	3 ⚠
-	HEAT SHRINK, TUBE, ID5.0xT0.5xL22mm, BLACK	DTB005015-0220	3 ⚠
-	Jack, Nut, SUS, Zinc, Black+CED Coating, 3/8ʊ32W	HNTA64130-4240	
-	NUT, M3.0x0.5P, NICKEL PLATED STEEL	HNT009540-1230	
-	Screw, M3.0x0.5PxL12, Zinc+CED Coating, SUS, PAN, HEAD, TYPE B, FREARSON, 300HRS	HSPA63083-3121	
-	SCREW, M3x0.5PxL8mm, NICKEL PLATED, PAN, HEAD	HSPA43083-1080	
-	Screw, T3.0x1.058PxL10, Zinc+CED Coating, PAN, HEAD, TYPE B, FREARSON, SUS	HSPA50343-3100	
-	Washer, Stanless SteeL, Zinc, Black+CED, BLK, OD14XID10XT0.5	HWSA11410-4056	

ELECTRICAL PART LIST

F1 Subwoofer Input-Output / DSP PCB Assembly

Resistors

Reference Designator	Description	Vendor Part Number	Note
R1	GP, CHIP, RES, 20K OHM, 1/10W, 1%, 0603	QCF011030-2002	
R2	CHIP, RES, 100 OHM, 1/4, W, 1%, TF, 1206, DALE, CRCW12061000FRT, E3	QCF041010-1000	
R3	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R4	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R5	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R6	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R7	CHIP, RES, 100 OHM, 1/4, W, 1%, TF, 1206, DALE, CRCW12061000FRT, E3	QCF041010-1000	
R8	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R9	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R10	CHIP, RES, 100 OHM, 1/4, W, 1%, TF, 1206, DALE, CRCW12061000FRT, E3	QCF041010-1000	
R11	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R12	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R13	GP, CHIP, RES, 0 OHM, 1/8W, 5%, 0805	QCF085020-0000	
R14	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R15	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R16	CHIP, RES, 100 OHM, 1/4, W, 1%, TF, 1206, DALE, CRCW12061000FRT, E3	QCF041010-1000	
R17	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R18	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R19	GP, CHIP, RES, 649 OHM, 1/10W, 1%, 0603	QCF011030-6490	
R20	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603	QCF011030-1001	
R21	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R22	GP, CHIP, RES, 150 OHM, 1%, 1/10W, 0603	QCF011030-1500	
R23	GP, CHIP, RES, 0 OHM, 1/8W, 5%, 0805	QCF085020-0000	
R24	CHIP, RES, 51 OHM, 1%, 1/4W, 1206	QCF041010-5109	
R25	GP, CHIP, RES, 649 OHM, 1/10W, 1%, 0603	QCF011030-6490	
R26	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603	QCF011030-1001	
R27	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R28	GP, CHIP, RES, 0 OHM, 1/8W, 5%, 0805	QCF085020-0000	
R29	GP, CHIP, RES, 0 OHM, 1/8W, 5%, 0805	QCF085020-0000	
R30	GP, CHIP, RES, 649 OHM, 1/10W, 1%, 0603	QCF011030-6490	
R31	GP, CHIP, RES, 2K OHM, 1/10W, 1%, 0603	QCF011030-2001	
R32	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603	QCF011030-1001	
R33	CHIP, RES, 9.1K OHM, 1/8W, 1%, 0805	QCF081020-9101	
R34	GP, CHIP, RES, 2K OHM, 1/10W, 1%, 0603	QCF011030-2001	
R35	CHIP, RES, 9.1K OHM, 1/8W, 1%, 0805	QCF081020-9101	
R36	GP, CHIP, RES, 5.1K OHM, 1%, 1/10W, 0603	QCF011030-5101	
R37	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R38	CHIP, RES, 51 OHM, 1%, 1/4W, 1206	QCF041010-5109	
R39	GP, CHIP, RES, 5.1K OHM, 1%, 1/10W, 0603	QCF011030-5101	
R40	GP, CHIP, RES, 649 OHM, 1/10W, 1%, 0603	QCF011030-6490	
R41	GP, CHIP, RES, 4.99K OHM, 1/10W, 1%, 0603	QCF011030-4991	
R42	GP, CHIP, RES, 150 OHM, 1%, 1/10W, 0603	QCF011030-1500	
R43	CHIP, RES, 51 OHM, 1%, 1/4W, 1206	QCF041010-5109	
R44	GP, CHIP, RES, 2K OHM, 1/10W, 1%, 0603	QCF011030-2001	
R45	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603	QCF011030-1001	
R46	CHIP, RES, 51 OHM, 1%, 1/4W, 1206	QCF041010-5109	
R47	GP, CHIP, RES, 649 OHM, 1/10W, 1%, 0603	QCF011030-6490	
R48	GP, CHIP, RES, 20K OHM, 1/10W, 1%, 0603	QCF011030-2002	

ELECTRICAL PART LIST

F1 Subwoofer Input-Output / DSP PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R49	GP, CHIP, RES, 649 OHM, 1/10W, 1%, 0603	QCF011030-6490	
R50	GP, CHIP, RES, 2K OHM, 1/10W, 1%, 0603	QCF011030-2001	
R51	GP, CHIP, RES, 0 OHM, 1/10W, 5%, 0603	QCF015030-0000	
R52	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R53	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603	QCF011030-1001	
R54	GP, CHIP, RES, 20K OHM, 1/10W, 1%, 0603	QCF011030-2002	
R55	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R56	GP, CHIP, RES, 150 OHM, 1%, 1/10W, 0603	QCF011030-1500	
R57	CHIP, RES, 9.1K OHM, 1/8W, 1%, 0805	QCF081020-9101	
R58	GP, CHIP, RES, 0 OHM, 1/10W, 5%, 0603	QCF015030-0000	
R59	CHIP, RES, 9.1K OHM, 1/8W, 1%, 0805	QCF081020-9101	
R60	GP, CHIP, RES, 20K OHM, 1/10W, 1%, 0603	QCF011030-2002	
R61	CHIP, RES, 51 OHM, 1%, 1/10W, 0603	QCF011030-5109	
R62	CHIP, RES, 51 OHM, 1%, 1/10W, 0603	QCF011030-5109	
R63	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R64	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R65	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R66	CHIP, RES, 470 OHM, 1/10W, 1%, 0603	QCF011030-4700	
R67	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R68	GP, CHIP, RES, 18K OHM, 1/10W, 1%, 0603	QCF011030-1802	
R69	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R70	GP, CHIP, RES, 1M OHM, 1%, 1/10W, 0603	QCF011030-1004	
R71	GP, CHIP, RES, 75 OHM, 1/10W, 1%, 0603	QCF011030-7509	
R72	CHIP, RES, 3.9K OHM, 1/10W, 1%, 0603	QCF011030-3901	
R73	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R74	GP, CHIP, RES, 4.7K OHM, 1/10W, 1%, 0603	QCF011030-4701	
R75	GP, CHIP, RES, 2.4K OHM, 1/10W, 1%, 0603	QCF011030-2401	
R76	CHIP, RES, 3.9K OHM, 1/10W, 1%, 0603	QCF011030-3901	
R77	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R78	GP, CHIP, RES, 2.2K OHM, 1/10W, 1%, 0603	QCF011030-2201	
R79	GP, CHIP, RES, 75 OHM, 1/10W, 1%, 0603	QCF011030-7509	
R80	GP, CHIP, RES, 2.2K OHM, 1/10W, 1%, 0603	QCF011030-2201	
R81	GP, CHIP, RES, 2.4K OHM, 1/10W, 1%, 0603	QCF011030-2401	
R82	GP, CHIP, RES, 2.2K OHM, 1/10W, 1%, 0603	QCF011030-2201	
R83	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R84	GP, CHIP, RES, 75 OHM, 1/10W, 1%, 0603	QCF011030-7509	
R85	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R86	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R87	CHIP, RES, 3.9K OHM, 1/10W, 1%, 0603	QCF011030-3901	
R88	GP, CHIP, RES, 2.4K OHM, 1/10W, 1%, 0603	QCF011030-2401	
R89	GP, CHIP, RES, 0 OHM, 1/8W, 5%, 0805	QCF085020-0000	
R90	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R91	CHIP, RES, 330K OHM, 1/10W, 1%, 0603	QCF011030-3303	
R92	CHIP, RES, 1.3K OHM, 1%, 1/10W, 0603	QCF011030-1301	
R93	GP, CHIP, RES, 15K OHM, 1%, 1/10W, 0603	QCF011030-1502	
R94	CHIP, RES, 51K OHM, 1/10W, 1%, 0603	QCF011030-5102	
R95	GP, CHIP, RES, 1K OHM, 1/8W, 1%, 0805	QCF081020-1001	
R96	GP, CHIP, RES, 200 OHM, 1/8W, 1%, 0805	QCF081020-2000	
R97	GP, CHIP, RES, 5.1K OHM, 1%, 1/10W, 0603	QCF011030-5101	
R98	GP, CHIP, RES, 5.1K OHM, 1%, 1/10W, 0603	QCF011030-5101	
R99	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R100	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	

ELECTRICAL PART LIST

F1 Subwoofer Input-Output / DSP PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R101	GP, CHIP, RES, 5.1K OHM, 1%, 1/10W, 0603	QCF011030-5101	
R102	GP, CHIP, RES, 20K OHM, 1/10W, 1%, 0603	QCF011030-2002	
R103	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R104	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603	QCF011030-1001	
R105	GP, CHIP, RES, 5.1K OHM, 1%, 1/10W, 0603	QCF011030-5101	
R106	GP, CHIP, RES, 20K OHM, 1/10W, 1%, 0603	QCF011030-2002	
R107	GP, CHIP, RES, 1M OHM, 1%, 1/10W, 0603	QCF011030-1004	
R108	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R109	CHIP, RES, 330K OHM, 1/10W, 1%, 0603	QCF011030-3303	
R110	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R111	GP, CHIP, RES, 2.2K OHM, 1/8W, 5%, 0805	QCF085020-2220	
R112	CHIP, RES, 330K OHM, 1/10W, 1%, 0603	QCF011030-3303	
R113	GP, CHIP, RES, 5.1K OHM, 1%, 1/10W, 0603	QCF011030-5101	
R114	GP, CHIP, RES, 2.2K OHM, 1/8W, 5%, 0805	QCF085020-2220	
R115	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R116	GP, CHIP, RES, 20K OHM, 1/10W, 1%, 0603	QCF011030-2002	
R117	CHIP, RES, 330K OHM, 1/10W, 1%, 0603	QCF011030-3303	
R118	GP, CHIP, RES, 1/10W, 1%, 100 OHM, 0603	QCF011030-1000	
R119	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R120	GP, CHIP, RES, 200 OHM, 1/8W, 1%, 0805	QCF081020-2000	
R121	CHIP, RES, 270 OHM, 1/8W, 1%, 0805	QCF081020-2700	
R122	CHIP, RES, 330K OHM, 1/10W, 1%, 0603	QCF011030-3303	
R123	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R124	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R125	GP, CHIP, RES, 2K OHM, 1/10W, 1%, 0603	QCF011030-2001	
R126	GP, CHIP, RES, 10K OHM, 1%, 1/10W, 0603	QCF011030-1002	
R127	GP, CHIP, RES, 150 OHM, 1%, 1/10W, 0603	QCF011030-1500	
R128	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R129	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R130	CHIP, RES, 330K OHM, 1/10W, 1%, 0603	QCF011030-3303	
R131	CHIP, RES, 330K OHM, 1/10W, 1%, 0603	QCF011030-3303	
R132	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R133	GP, CHIP, RES, 2K OHM, 1/10W, 1%, 0603	QCF011030-2001	
R134	GP, CHIP, RES, 2K OHM, 1/10W, 1%, 0603	QCF011030-2001	
R135	GP, CHIP, RES, 2K OHM, 1/10W, 1%, 0603	QCF011030-2001	
R136	GP, CHIP, RES, 2K OHM, 1/10W, 1%, 0603	QCF011030-2001	
R138	GP, CHIP, RES, 75 OHM, 1/10W, 1%, 0603	QCF011030-7509	
R148	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603	QCF011030-1001	
R149	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603	QCF011030-1001	
R151	CHIP, RES, 3.9K OHM, 1/10W, 1%, 0603	QCF011030-3901	
R152	GP, CHIP, RES, 5.1K OHM, 1%, 1/10W, 0603	QCF011030-5101	
R153	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R154	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R155	GP, CHIP, RES, 5.1K OHM, 1%, 1/10W, 0603	QCF011030-5101	
R156	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R157	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R158	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R159	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R160	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R161	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R163	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R164	GP, CHIP, RES, 1M OHM, 1%, 1/10W, 0603	QCF011030-1004	

ELECTRICAL PART LIST

F1 Subwoofer Input-Output / DSP PCB Assembly

Resistors (continued)

Reference Designator	Description	Vendor Part Number	Note
R165	GP, CHIP, RES, 100K OHM, 1%, 1/10W, 0603	QCF011030-1003	
R166	GP, CHIP, RES, 2.4K OHM, 1/10W, 1%, 0603	QCF011030-2401	
R167	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R168	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R169	CHIP, RES, 3.9K OHM, 1/10W, 1%, 0603	QCF011030-3901	
R170	GP, CHIP, RES, 2.4K OHM, 1/10W, 1%, 0603	QCF011030-2401	
R171	CHIP, RES, 3.9K OHM, 1/10W, 1%, 0603	QCF011030-3901	
R172	GP, CHIP, RES, 2.4K OHM, 1/10W, 1%, 0603	QCF011030-2401	
R173	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R174	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R175	CHIP, RES, 3.9K OHM, 1/10W, 1%, 0603	QCF011030-3901	
R176	GP, CHIP, RES, 2.4K OHM, 1/10W, 1%, 0603	QCF011030-2401	
R177	CHIP, RES, 3.9K OHM, 1/10W, 1%, 0603	QCF011030-3901	
R178	GP, CHIP, RES, 2.4K OHM, 1/10W, 1%, 0603	QCF011030-2401	
R179	GP, CHIP, RES, 3.3K OHM, 1/10W, 1%, 0603	QCF011030-3301	
R183	GP, CHIP, RES, 1K OHM, 1%, 1/10W, 0603	QCF011030-1001	
R185	GP, CHIP, RES, 47K OHM, 1/10W, 1%, 0603	QCF011030-4702	
R186	GP, CHIP, RES, 1M OHM, 1%, 1/10W, 0603	QCF011030-1004	

Capacitors

Reference Designator	Description	Vendor Part Number	Note
C1	GP, CHIP, CAP, 5%, 50V, 0603, 220pF, TYPE NPO	PXL410370-2210	
C2	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C3	GP, CHIP, CAP, 5%, 50V, 0603, 220pF, TYPE NPO	PXL410370-2210	
C4	GP, CHIP, CAP, 470pF, 50V, 5%, 0603, NPO	PXL410370-4710	
C5	GP, CHIP, CAP, 5%, 50V, 0603, 220pF, TYPE NPO	PXL410370-2210	
C6	GP, CHIP, CAP, 470pF, 50V, 5%, 0603, NPO	PXL410370-4710	
C7	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C8	GP, CHIP, CAP, 5%, 50V, 0603, 220pF, TYPE NPO	PXL410370-2210	
C9	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C10	GP, CHIP, CAP, 470pF, 50V, 5%, 0603, NPO	PXL410370-4710	
C11	GP, CHIP, CAP, 470pF, 50V, 5%, 0603, NPO	PXL410370-4710	
C12	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C13	GP, CHIP, CAP, 470pF, 50V, 5%, 0603, NPO	PXL410370-4710	
C14	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C15	CHIP, CAP, 18pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1800	
C16	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C17	GP, CHIP, CAP, 0.1uF, 50V, 10%,, 0805, TYPE X7R	PYL456470-1040	
C18	GP, CHIP, CAP, 3300pF, 50V, 5%,, 0603, TYPE NPO	PXL410370-3320	
C19	GP, CHIP, CAP, 470pF, 50V, 5%, 0603, NPO	PXL410370-4710	
C20	GP, CHIP, CAP, 0.1uF, 50V, 10%,, 0805, TYPE X7R	PYL456470-1040	
C200	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C21	CHIP, CAP, 10uF, 16V, 10%, 0805, X7R	PYL456440-1060	
C22	CHIP, CAP, 1uF, 10V, 10%, 0603, TYPE X7R	PXL456430-1050	
C23	CAP, METAL, MINIATURE, BOX, 5%, 100V, 0.1uF, P=5MM, MEM104J100A51	PLN1373A0-1040	

ELECTRICAL PART LIST

F1 Subwoofer Input-Output / DSP PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C24	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C25	CAP, METAL, MINIATURE, BOX, 5%, 100V, 0.1uF, P=5MM, MEM104J100A51	PLN1373A0-1040	
C26	GP, CHIP, CAP, 470pF, 50V, 5%, 0603, NPO	PXL410370-4710	
C27	CHIP, CAP, 18pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1800	
C28	CAP, METAL, MINIATURE, BOX, 5%, 100V, 0.1uF, P=5MM, MEM104J100A51	PLN1373A0-1040	
C29	CAP, METAL, MINIATURE, BOX, 5%, 100V, 0.1uF, P=5MM, MEM104J100A51	PLN1373A0-1040	
C30	GP, CHIP, CAP, 3300pF, 50V, 5%,, 0603, TYPE NPO	PXL410370-3320	
C31	GP, CHIP, CAP, 0.1uF, 50V, 10%,, 0805, TYPE X7R	PYL456470-1040	
C32	GP, CHIP, CAP, 470pF, 50V, 5%, 0603, NPO	PXL410370-4710	
C33	CAP, ELECT, 10uF, 50V, 20%, 105', 5x11mm, P=2.5, A/I	PME099570-1000	
C34	GP, CHIP, CAP, 0.1uF, 50V, 10%,, 0805, TYPE X7R	PYL456470-1040	
C35	CAP, METAL, MINIATURE, BOX, 5%, 100V, 0.1uF, P=5MM, MEM104J100A51	PLN1373A0-1040	
C36	CAP, METAL, MINIATURE, BOX, 5%, 100V, 0.1uF, P=5MM, MEM104J100A51	PLN1373A0-1040	
C37	CAP, METAL, MINIATURE, BOX, 5%, 100V, 0.1uF, P=5MM, MEM104J100A51	PLN1373A0-1040	
C38	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C39	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C40	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C41	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C42	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C43	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C44	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C45	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C46	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C47	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C48	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C49	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C50	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C51	CHIP, ELECT, 10uF, 16V, SMD, 4x4mm	PBE099540-1000	
C52	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C53	CHIP, ELECT, 20%, 6.3V, SMD, -40~+105'C, 47uF, 4*5MM	PBE099520-4700	
C54	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C55	CHIP, CAP, 10uF, 6.3V, 10%, 0805, X7R	PYL456420-1060	
C56	CAP, MINIT, ELECT, 100uF, 35V, 20%, 105', 8x7, P=3.5, LOW ESR	PLE999560-1010	
C57	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C58	CHIP, CAP, 1uF, 10V, 10%, 0603, TYPE X7R	PXL456430-1050	
C59	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C60	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C61	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C62	GP, CHIP, CAP, 3.3nF, 50V, 10%, 0603, X7R	PXL456470-3320	
C63	GP, CHIP, CAP, 56nF, 50V, 10%, 0603, X7R	PXL456470-5630	
C64	GP, CHIP, CAP, 22pF, 50V, 5%, 0603, TYPE NPO	PXL410370-2200	
C65	GP, CHIP, CAP, 680pF, 50V, 5%, 0603, NPO	PXL410370-6810	

ELECTRICAL PART LIST

F1 Subwoofer Input-Output / DSP PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C66	GP, CHIP, CAP, 22pF, 50V, 5%, 0603, TYPE NPO	PXL410370-2200	
C67	CHIP, CAP, 390pF, 50V, 10%, 0603, X7R	PXL456470-3910	
C68	CHIP, ELECT, 10uF, 16V, SMD, 4x4mm	PBE099540-1000	
C69	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C70	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C71	CAP, ELECT, 20%, 25V, 100uF, L=3.5mm, 105'	PVE099550-1010	
C72	GP, CHIP, CAP, 820pF, 50V, 5%,, 0603, TYPE NPO	PXL410370-8210	
C73	CHIP, CAP, 10uF, 6.3V, 10%, 0805, X7R	PYL456420-1060	
C74	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C75	CHIP, CAP, 10uF, 16V, 10%, 0805, X7R	PYL456440-1060	
C76	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C77	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C78	CAP, MINIT, ELECT, 100uF, 35V, 20%, 105', 8x7, P=3.5, LOW ESR	PLE999560-1010	
C79	CAP, MINIT, ELECT, 100uF, 35V, 20%, 105', 8x7, P=3.5, LOW ESR	PLE999560-1010	
C80	CAP, ELECT, 47uF, 16V, 20%, 105'C, 5x11xP2	PLE099542-4700	
C81	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C82	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C83	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C84	CAP, ELECT, 220uF, 25V, 20%, 8x12x4mm, 105'C, AI-RADIAL	PME099550-2210	
C85	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C86	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C87	CHIP, CAP, 10uF, 16V, 10%, 0805, X7R	PYL456440-1060	
C88	CAP, ELECT, 470uF, 25V, 20%, 8x14mm, P=3.5mm, D10MM, -25'C + 105'C, 3.5MM	PVE099550-4710	
C89	CHIP, CAP, 10uF, 16V, 10%, 0805, X7R	PYL456440-1060	
C90	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C91	CAP, ELECT, 470uF, 25V, 20%, 8x14mm, P=3.5mm, D10MM, -25'C + 105'C, 3.5MM	PVE099550-4710	
C92	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C93	CAP, ELECT, 220uF, 25V, 20%, 8x12x4mm, 105'C, AI-RADIAL	PME099550-2210	
C94	GP, CHIP, CAP, 68pF, 50V, 5%,, 0603, TYPE NPO	PXL410370-6800	
C95	GP, CHIP, CAP, 1800pF, 50V, 5%,, 0603, TYPE NPO	PXL410370-1820	
C96	GP, CHIP, CAP, 0.015uF, 50V, 10%,, 0603, TYPE X7R	PXL456470-1530	
C97	CHIP, CAP, 390pF, 50V, 10%, 0603, X7R	PXL456470-3910	
C98	GP, CHIP, CAP, 680pF, 50V, 5%, 0603, NPO	PXL410370-6810	
C99	CAP, MINIT, ELECT, 100uF, 35V, 20%, 105', 8x7, P=3.5, LOW ESR	PLE999560-1010	
C100	GP, CHIP, CAP, 680pF, 50V, 5%, 0603, NPO	PXL410370-6810	
C101	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C102	CHIP, ELECT, 20%, 6.3V, SMD, -40~+105'C, 47uF, 4*5MM	PBE099520-4700	
C103	CHIP, CAP, 10uF, 6.3V, 10%, 0805, X7R	PYL456420-1060	
C104	CHIP, ELECT, 10uF, 16V, SMD, 4x4mm	PBE099540-1000	
C105	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C106	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C107	CHIP, ELECT, 10uF, 16V, SMD, 4x4mm	PBE099540-1000	
C108	CAP, ELECT, 47uF, 16V, 20%, 105'C, 5x11xP2	PLE099542-4700	

ELECTRICAL PART LIST

F1 Subwoofer Input-Output / DSP PCB Assembly

Capacitors (continued)

Reference Designator	Description	Vendor Part Number	Note
C109	CAP, METAL, MINIATURE, BOX, 5%, 100V, 0.1uF, P=5MM, MEM104J100A51	PLN1373A0-1040	
C110	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C111	CHIP, CAP, 10uF, 16V, 10%, 0805, X7R	PYL456440-1060	
C112	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C113	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C114	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C115	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C116	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C117	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C118	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C119	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C120	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C121	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C122	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C124	CHIP, ELECT, 10uF, 16V, SMD, 4x4mm	PBE099540-1000	
C125	CHIP, ELECT, 10uF, 16V, SMD, 4x4mm	PBE099540-1000	
C126	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C127	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C128	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C129	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C130	CAP, MINIT, ELECT, 100uF, 16V, 20%, 105', 5x7, P=2mm	PLE999540-1010	
C131	CHIP, CAP, 10uF, 16V, 10%, 0805, X7R	PYL456440-1060	
C132	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C133	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C134	CHIP, CAP, 4.7uF, 16V, 10%, 0805, TYPE X7R	PYL456440-4750	
C135	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C136	GP, CHIP, CAP, 820pF, 50V, 5%,, 0603, TYPE NPO	PXL410370-8210	
C137	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C138	GP, CHIP, CAP, 680pF, 50V, 5%, 0603, NPO	PXL410370-6810	
C139	GP, CHIP, CAP, 680pF, 50V, 5%, 0603, NPO	PXL410370-6810	
C140	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C141	GP, CHIP, CAP, 820pF, 50V, 5%,, 0603, TYPE NPO	PXL410370-8210	
C142	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C143	GP, CHIP, CAP, 680pF, 50V, 5%, 0603, NPO	PXL410370-6810	
C144	GP, CHIP, CAP, 680pF, 50V, 5%, 0603, NPO	PXL410370-6810	
C145	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C146	GP, CHIP, CAP, 820pF, 50V, 5%,, 0603, TYPE NPO	PXL410370-8210	
C147	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C148	GP, CHIP, CAP, 680pF, 50V, 5%, 0603, NPO	PXL410370-6810	
C149	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C150	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C151	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C152	CHIP, CAP, 1000pF, 50V, 5%, 0603, TYPE NPO	PXL410370-1020	
C153	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C154	GP, CHIP, CAP, 0.1uF, 50V, 10%, 0603, TYPE X7R	PXL456470-1040	
C155	CHIP, ELECT, 10uF, 16V, SMD, 4x4mm	PBE099540-1000	
C156	CHIP, ELECT, 10uF, 16V, SMD, 4x4mm	PBE099540-1000	

ELECTRICAL PART LIST

F1 Subwoofer Input-Output / DSP PCB Assembly

Ferrite Beads and Inductors

Reference Designator	Description	Vendor Part Number	Note
B1	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0805, DCR0.25, OHM, I>1500MA, IDC=20	SCBA08051-6010	
B3	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0805, DCR0.25, OHM, I>1500MA, IDC=20	SCBA08051-6010	
B4	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0805, DCR0.25, OHM, I>1500MA, IDC=20	SCBA08051-6010	
B5	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0805, DCR0.25, OHM, I>1500MA, IDC=20	SCBA08051-6010	
B6	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0805, DCR0.25, OHM, I>1500MA, IDC=20	SCBA08051-6010	
B7	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0805, DCR0.25, OHM, I>1500MA, IDC=20	SCBA08051-6010	
B10	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0805, DCR0.25, OHM, I>1500MA, IDC=20	SCBA08051-6010	
L1	SMD, INDUCTOR, 3.3uH, 5A, 20%, GPSR0730-3R3M, 7.2*6.6*3.0MM, GANTONG	SCNA31705-3310	
L2	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0603, DCR0.4, OHM, I>1000MA	SCBA06031-6010	
L3	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0603, DCR0.4, OHM, I>1000MA	SCBA06031-6010	
L4	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0603, DCR0.4, OHM, I>1000MA	SCBA06031-6010	
L5	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0603, DCR0.4, OHM, I>1000MA	SCBA06031-6010	
L9	CHIP, BEAD, 1100 OHM, 25%, HZ0603B112R-10	SCBA06031-1120	
L20	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0603, DCR0.4, OHM, I>1000MA	SCBA06031-6010	
L21	CHIP, BEAD, 600 OHM, 25%, 100MHZ, SMD, 0603, DCR0.4, OHM, I>1000MA	SCBA06031-6010	

Diodes

Reference Designator	Description	Vendor Part Number	Note
D1	SMD, Diode, SOD-323, 1SS355, 0.1A, 80V	RCD113550-0010	
D2	SMD, Diode, SOD-323, 1SS355, 0.1A, 80V	RCD113550-0010	
D3	GP, DIODE, SW, LL4148, TELEFUNKEN, SOD80, SMT TYPE	RCD104148-1010	
D4	GP, DIODE, SW, LL4148, TELEFUNKEN, SOD80, SMT TYPE	RCD104148-1010	
D5	SCHOTTKY, DIODE, SK32, SMC, DO-214AB	RCD100032-0010	
D6	SMD, LED, 2.0x1.25mm, MS-PTB2012CURSGAC, RED/GREEN	KCD250001-0010	
D7	GP, DIODE, SW, LL4148, TELEFUNKEN, SOD80, SMT TYPE	RCD104148-1010	
D8	SMD, LED, RED/BLUE, MS-PTB2012CURSBAC, 2.0X1.25MM	KCD260004-0010	
D9	DIODE, BAT54S-7-F, SOT-23	RCD100540-0010	
D10	CHIP, LED, H-0805AA22E008-01, AMBER, 0805, 600-608NM	KCD300805-0020	
D12	GP, DIODE, SW, LL4148, TELEFUNKEN, SOD80, SMT TYPE	RCD104148-1010	

ELECTRICAL PART LIST

F1 Subwoofer Input-Output / DSP PCB Assembly

Diodes (continued)

Reference Designator	Description	Vendor Part Number	Note
D13	GP, DIODE, SW, LL4148, TELEFUNKEN, SOD80, SMT TYPE	RCD104148-1010	
D14	GP, DIODE, SW, LL4148, TELEFUNKEN, SOD80, SMT TYPE	RCD104148-1010	
D15	DIODE, SW, BAV99, DIODES INC, SOT-23, 3PIN, SMT TYPE	RCD100099-0010	
D16	DIODE, SW, BAV99, DIODES INC, SOT-23, 3PIN, SMT TYPE	RCD100099-0010	
D17	DIODE, SW, BAV99, DIODES INC, SOT-23, 3PIN, SMT TYPE	RCD100099-0010	
D18	DIODE, SW, BAV99, DIODES INC, SOT-23, 3PIN, SMT TYPE	RCD100099-0010	
D19	DIODE, SW, BAV99, DIODES INC, SOT-23, 3PIN, SMT TYPE	RCD100099-0010	
D20	DIODE, SW, BAV99, DIODES INC, SOT-23, 3PIN, SMT TYPE	RCD100099-0010	
D21	DIODE, SW, BAV99, DIODES INC, SOT-23, 3PIN, SMT TYPE	RCD100099-0010	
D22	DIODE, SW, BAV99, DIODES INC, SOT-23, 3PIN, SMT TYPE	RCD100099-0010	
D23	GP, DIODE, SW, LL4148, TELEFUNKEN, SOD80, SMT TYPE	RCD104148-1010	
D24	DIODE, SW, BAV99, DIODES INC, SOT-23, 3PIN, SMT TYPE	RCD100099-0010	
D25	DIODE, SW, BAV99, DIODES INC, SOT-23, 3PIN, SMT TYPE	RCD100099-0010	
D27	GP, DIODE, SW, LL4148, TELEFUNKEN, SOD80, SMT TYPE	RCD104148-1010	

Transistors

Reference Designator	Description	Vendor Part Number	Note
Q1	CHIP, XISTR, 3P, PNP, MMBT3906, SOT23	RCP003906-0002	
Q2	CHIP, XISTR, 3P, PNP, MMBT3906, SOT23	RCP003906-0002	
Q3	XISTR, NPN, MMBT3904, SOT-23, LRC, NPN, GENERAL, PURPOSE, AMPLIFIER	RCN003904-0008	
Q4	XISTR, NPN, MMBT3904, SOT-23, LRC, NPN, GENERAL, PURPOSE, AMPLIFIER	RCN003904-0008	
Q5	XISTR, NPN, MMBT3904, SOT-23, LRC, NPN, GENERAL, PURPOSE, AMPLIFIER	RCN003904-0008	
Q6	XISTR, NPN, MMBT3904, SOT-23, LRC, NPN, GENERAL, PURPOSE, AMPLIFIER	RCN003904-0008	
Q11	XISTR, PNP, KST92, SOT-23	RCP000092-0001	
Q12	XISTR, NPN, MMBT3904, SOT-23, LRC, NPN, GENERAL, PURPOSE, AMPLIFIER	RCN003904-0008	
Q15	COMPOSITE TRANSISTOR, SOT-363, MMDT4413	RCC004413-0010	
Q16	COMPOSITE TRANSISTOR, SOT-363, MMDT4413	RCC004413-0010	
Q18	XISTR, NPN, MMBT3904, SOT-23, LRC, NPN, GENERAL, PURPOSE, AMPLIFIER	RCN003904-0008	
Q19	CHIP, MOSFET, 2N7002, SOT-23, N-CHANNEL	RCM207002-1001	
Q20	CHIP, MOSFET, 2N7002, SOT-23, N-CHANNEL	RCM207002-1001	

ELECTRICAL PART LIST

F1 Subwoofer Input-Output / DSP PCB Assembly

Transistors (continued)

Reference Designator	Description	Vendor Part Number	Note
Q21	XISTR, NPN, MMBT3904, SOT-23, LRC, NPN, GENERAL, PURPOSE, AMPLIFIER	RCN003904-0008	
Q22	SMD, MOSFET, N-CH, SOT-363, 2N7002DW, FAIRCHILD	RCM027002-1001	
Q23	SMD, MOSFET, N-CH, SOT-363, 2N7002DW, FAIRCHILD	RCM027002-1001	
Q24	SMD, MOSFET, N-CH, SOT-363, 2N7002DW, FAIRCHILD	RCM027002-1001	
Q25	SMD, MOSFET, N-CH, SOT-363, 2N7002DW, FAIRCHILD	RCM027002-1001	
Q26	CHIP, XISTR, 3P, PNP, MMBT3906, SOT23	RCP003906-0002	
Q27	SMD, MOSFET, N-CH, SOT-363, 2N7002DW, FAIRCHILD	RCM027002-1001	
Q28	COMPOSITE TRANSISTOR, SOT-363, MMDT4413	RCC004413-0010	
Q29	COMPOSITE TRANSISTOR, SOT-363, MMDT4413	RCC004413-0010	
Q30	CHIP, MOSFET, 2N7002, SOT-23, N-CHANNEL	RCM207002-1001	
Q31	CHIP, MOSFET, 2N7002, SOT-23, N-CHANNEL	RCM207002-1001	
Q32	XISTR, NPN, MMBT3904, SOT-23, LRC, NPN, GENERAL, PURPOSE, AMPLIFIER	RCN003904-0008	
Q33	XISTR, NPN, MMBT3904, SOT-23, LRC, NPN, GENERAL, PURPOSE, AMPLIFIER	RCN003904-0008	
Q34	XISTR, NPN, MMBT3904, SOT-23, LRC, NPN, GENERAL, PURPOSE, AMPLIFIER	RCN003904-0008	

Integrated Circuits

Reference Designator	Description	Vendor Part Number	Note
IC1	DC-DC, CONVERTER, TI, TPS54331DR, SOIC8	RCI054331-0001	
U1	IC, OP-AMP, DUAL, 8P, SO-8, NJM2068	RCI002068-0001	
U2	IC, OP-AMP, DUAL, 8P, SO-8, NJM2068	RCI002068-0001	
U3	IC, OP-AMP, DUAL, 8P, SO-8, NJM4580	RCI004580-0001	
U4	IC, OP-AMP, DUAL, 8P, SO-8, NJM4580	RCI004580-0001	
U5	IC, OP-AMP, DUAL, 8P, SO-8, NJM4580	RCI004580-0001	
U6	IC, OP-AMP, DUAL, 8P, SO-8, NJM4580	RCI004580-0001	
U7	IC, Op-Amp, SOIC-8, TL072CDR	RCI000072-0001	
U8	IC, CODEC, 28P, TSSOP, CS4272, 24-BIT, 192 KHZ, STEREO AUDIO	RCI004272-0001	
U9	GP, IC, 48P, ADAU1701JSTZ-RL, DSP, LQFP48, 3910920, ANALOG DEVICES	RCI001701-0001	
U10	IC, SO8-W, AT24C64D, 1.7V~5.5V, Atmel, EEPROM, 64K	RCI002464-0001	
U11	IC, MPU, SUPERVISORY, SOT23, MAX809, 2.93V	RCI000809-0001	
U12	IC, REGULATOR, ST, L7815CV, 1A, TO-220	RHI007815-1001	
U13	GP, IC, 3P, UTC, LD1117AL-3.3,, 1A, LOW, DROPOUT, POSITIVE, VOL	RCI111733-1102	
U14	IC, REGULATOR, ST, L7915CV, 1A, TO-220	RHI007915-1001	
U15	IC, OP-AMP, DUAL, 8P, SO-8, NJM4580	RCI004580-0001	
U16	IC, 3P, UTC, LD1117AL-5.0, SOT-223, 800MA, LOW-DROPOUT, REGULATOR	RCI111750-0001	
U17	IC, SOIC-8, NJM2121M	RCI002121-0001	
U18	IC, SOIC-8, NJM2121M	RCI002121-0001	
U19	IC, OP-AMP, DUAL, 8P, SO-8, NJM4580	RCI004580-0001	

ELECTRICAL PART LIST

F1 Subwoofer Input-Output / DSP PCB Assembly

Miscellaneous

Reference Designator	Description	Vendor Part Number	Note
CON1	XLR Connector, 6P, NCJ6FAV-0, 25*25*24MM	CJDA06401-1010	
CON2	XLR Connector, 3P, NC3MAAV, 19.8*9.8*24MM	CJDA03401-1010	
CON3	XLR Connector, 6P, NCJ6FAV-0, 25*25*24MM	CJDA06401-1010	
CON4	XLR Connector, 3P, NC3MAAV, 19.8*9.8*24MM	CJDA03401-1010	
J1	CONNECTOR, 3 PIN, P=2.5, White, 90', Normal	CCN250000-0503	
J2	CONNECTOR, PITCH=2.0mm, 3 PIN, 90', RE	CCN200010-0503	
J3	CONNECTOR, 10 PIN, P=2.5, White, 90', Normal	CCN250000-0510	
SW1	SLIDE, SWITCH, 2P/2T, SS-22F20, 17*7.5MM	MSWA04018-0010	
SW2	SLIDE, SWITCH, 2P/2T, SS-22F20, 17*7.5MM	MSWA04018-0010	
SW3	SLIDE, SWITCH, 2P/3T, SS-23E03, 20*9.3MM	MSWA04017-0010	
SW4	SMD, TACT, SWITCH, SOY-164BST	MCWA06011-0010	
VR1	POT, ROTARY, 10k OHM, RV09BCF-40-25F-B10K-0C, 12 O'CLOCK POSITION WITH CENTER DETENT	MVRA02101-1031	
Y1	CRYSTAL, CITIZEN: CM309S24.576MABJTR, 30ppm, 24.576MHZ, L12.5XW4.6XH3.7MM	JCQ003001-2461	
-	Knob, Volume, TPE, natural, black, H19xOD12	BPKA05082-0001	
-	Slide Switch Cap, ABS, Kingfa GAR, L20xW19xH9	BPOA00090-0001	
-	Light Guide, LED, /I/O, PC+5%, TiO, L29.6xW16.8xH7.3	BPSA02086-0001	
-	DSP Panel, Aluminum, 1050, painted, L201.15xW147.5xH242xT3	GALA00626-0001	
-	DSP Gasket, EVA, 38degree, Natural Black, L200.55xW14.5xT2	IVEA00727-0001	
-	DSP Gasket, EVA, 38degree, Natural Black, L125.9xW8xT2	IVEA00727-0002	
-	SCREW, M3x0.5PxL8mm, NICKEL PLATED, PAN HEAD	HSPA43083-1080	
-	Screw, T3.0x1.058PxL10, Zinc+CED Coating, PAN HEAD, TYPE B, FREARSON SUS	HSPA50343-3100	

DISASSEMBLY PROCEDURES

F1 Model 812 Loudspeaker

Important Note: The top and rear handles and their inserts are not replaceable for safety reasons. Do not attempt to remove them. They are not stocked as repair parts.

Some components internal to the loudspeaker enclosure, such as the internal brackets and the left and right SMPS cover are not replaceable.

1. Foot Removal

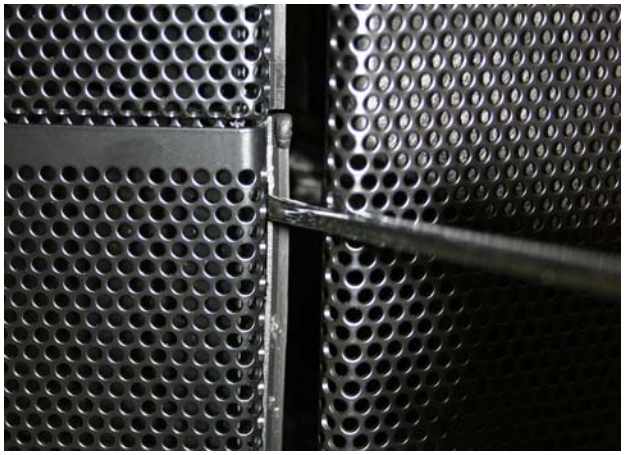
1.1 Remove the one screw that secures the foot to the loudspeaker enclosure.

1.2 Lift off the foot.

2. Front Grille Removal

Note: The front center and upper and lower grilles are simply press-fit into slots in the Twiddler® baffle.

2.1 Using a heavy duty straight pick or thin screwdriver, press the tool in between the side of the grille and the array baffle plastic.



2.2 Gently pry the grille forward toward the front of the speaker to be able to grasp it.

2.3 Grasp the grille section you wish to remove. Carefully pull the grille straight off toward you, one side at a time until it is clear of the array baffle. Lift off the grille.

Re-assembly Note: When re-installing the grilles, use an angle tool to support the slot of the array baffle that the grille seats into. This will make it easier to replace the grille.

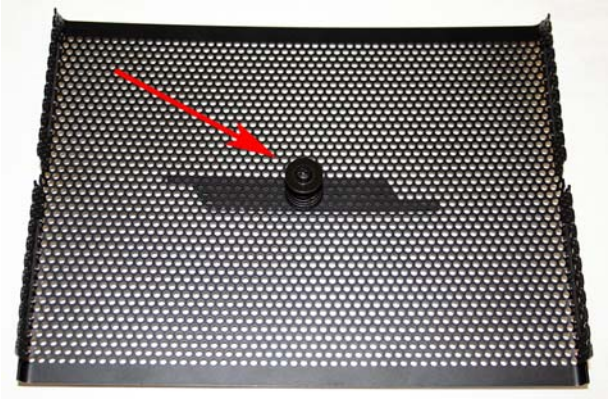
DISASSEMBLY PROCEDURES

Note: The Bose® logo is attached to the center grille. Replacement center grilles DO NOT come with the logo attached. You will need to either re-use the old logo or order a new one.

3. Logo Removal

3.1 Remove the center grille section using procedure 1.

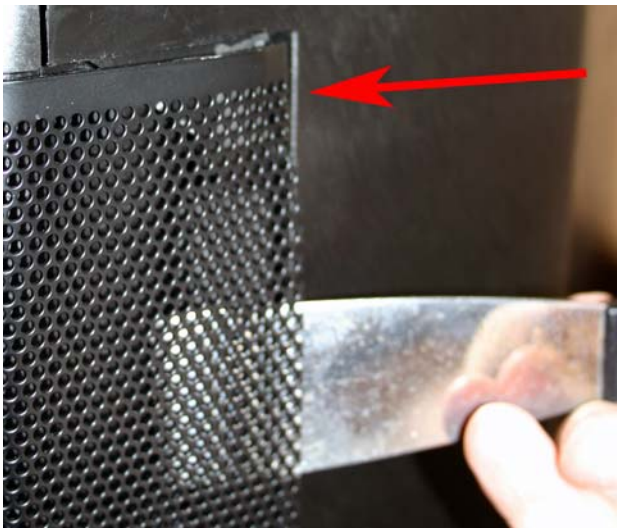
3.2 Remove the screw, washer and spring that secure the logo to the center grille section. Lift off the logo.



4. Side Grille Removal

4.1 Using a flat plastic tool, move the grille sides away from the loudspeaker enclosure until the retaining tabs are clear of the enclosure. There are four retaining tabs per grille. **Note:** Take care to not damage the loudspeaker enclosure or the side grille.

4.2 Once the retaining tabs are clear, pull the side grille straight off from the front of the enclosure.



5. Twiddler® Removal

5.1 Remove the front grilles using procedure 2.

5.2 Remove the 4 screws that secure the driver you wish to remove. Lift the driver out of the baffle.

DISASSEMBLY PROCEDURES

5.3 Remove the two Faston connectors from the driver. Lift out the driver. **Note:** Be sure to observe polarity when connecting the new driver.

6. Stand Mount Interface Removal

6.1 Remove the six screws that secure the stand mount to the bottom of the loud-speaker enclosure.

6.2 Carefully lift the stand mount interface away from the loudspeaker enclosure. Take care to not damage the mount interface gasket. **Note:** If you damage the gasket, you can order a replacement.

6.3 Lift off the stand mount interface.

Note: After replacement, ensure that there are no air leaks using the test procedures in this service manual.

7. Woofer Removal

Notes:
- The woofer is located behind the woofer baffle and the Twiddler array. You must remove the woofer baffle to access the woofer.
- There is no need to remove the Twiddler baffles or drivers to remove the woofer baffle.

7.1 Remove the center and side grilles using procedures 2 and 3. Remove the feet using procedure 1.

7.2 Locate and remove the baffle retention screws. There are a total of twelve on the baffle. Also remove the two silver colored screws located in the middle of the sides of the enclosure. Do not remove the four black screws along the sides of the enclosure. I**mportant Note:** There are 2 screws located behind the top two holes in the upper Twiddler baffle. You will need a long Phillips-head screwdriver to reach them. There are no screws located behind the two holes in the lower Twiddler baffle.

DISASSEMBLY PROCEDURES

Re-assembly Note: The four self-tapping screws go in the holes at the top of the enclosure and the eight machine screws are used along the sides.

7.3 Place the loudspeaker onto its back. Remove the stand mount interface using procedure 6.

7.4 Once the screws are removed, you are ready to separate the woofer baffle from the loudspeaker enclosure.

Separate the front section of the enclosure from the rear section by pulling them apart at the opening left by the removal of the stand mount interface. Refer to the photo at right.

Lift off the front enclosure section. Once the front section has come loose, you can rest the ports on the internal brackets to allow disconnecting the wiring harnesses.
Note: Take care to not damage the large main enclosure gasket. You will need to re-use it. If you do damage it, you can order a replacement.

7.5 Disconnect the two Faston connectors from the woofer. Disconnect the wiring harnesses at the LED PCB, the two Hall Effect Sensor PCBs and the Twiddler array connector. Lift off the front enclosure section.

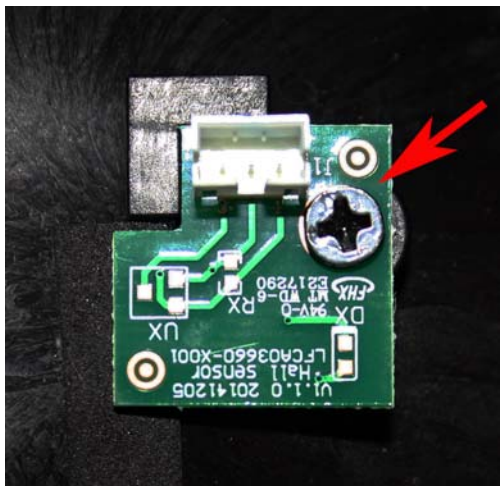
7.6 Place the front enclosure section face down on the bench. Remove the eight screws that secure the woofer to the woofer baffle. Lift off the woofer.
Notes:
- Be sure to correctly place the main enclosure gasket in the groove along the edge of the enclosure to ensure there are no air leaks after the woofer baffle is replaced.
- After woofer baffle replacement, ensure that there are no air leaks using the test procedures in this service manual.

8. LED PCB Removal

8.1 Perform steps 7.1 to 7.5 to remove the front baffle section.

DISASSEMBLY PROCEDURES

8.2 Locate the LED PCB on the back of the front enclosure section. Refer to the photo at right. Remove the two screws that secure the PCB to the front enclosure. Lift off the PCB assembly.



9. Hall Effect Sensor PCB Removal

9.1 Perform steps 7.1 to 7.5 to remove the front baffle section.

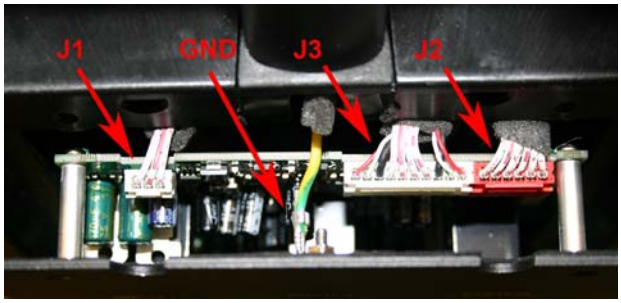
9.2 Locate the Hall Effect Sensor PCB that you wish to remove on the back of the front enclosure section. Refer to the photo at the bottom of the previous page.
Note: There are two Hall Effect Sensor PCBs, an upper and a lower. Be sure to remove the correct PCB assembly.

9.3 Remove the one screw that secures the PCB to the front enclosure. Lift off the PCB assembly.

10. DSP / I-O PCB Assembly Removal

10.1 Remove the six screws that secure the DSP / I-O PCB assembly to the loudspeaker enclosure.

10.2 Carefully lift the DSP / I-O PCB assembly away from the enclosure. Take care to not damage the gasket.



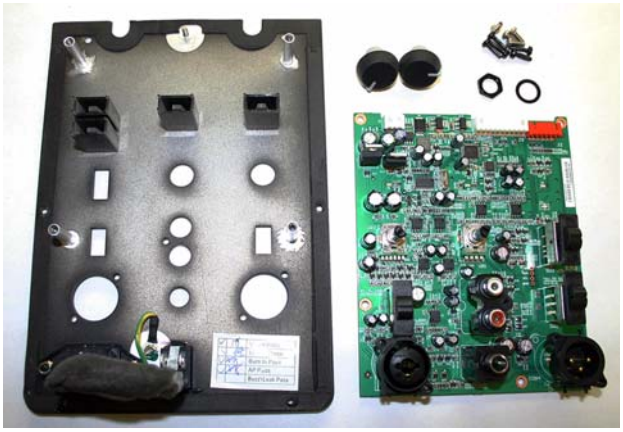
DISASSEMBLY PROCEDURES

10.3 Disconnect the ground connection wire. Retain the nut for re-use.

10.4 Disconnect the three wire harnesses at J1, J2 and J3. Lift off the PCB assembly.

10.5 Remove the two knobs. Remove the five screws and one nut that secure the jacks to the panel.

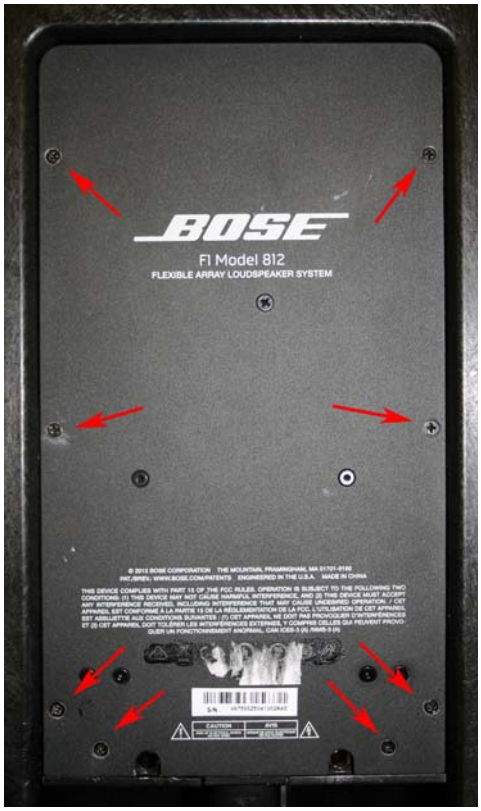
10.6 Turn over the panel and remove the four screws that secure the PCB assembly to the panel. Lift off the PCB assembly.

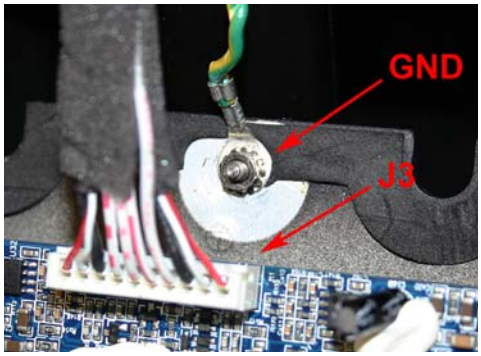


11. SMPS / Amplifier PCB Assembly Removal

11.1 Remove the eight screws that secure the SMPS / Amplifier assembly to the loud-speaker enclosure.

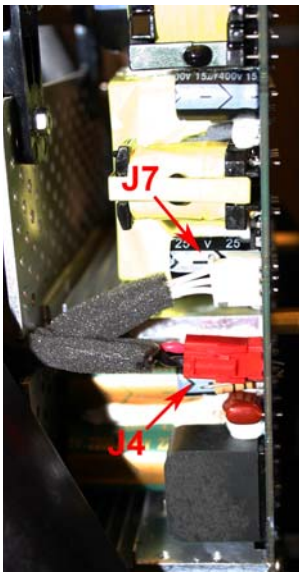
11.2 Carefully lift the SMPS / Amp assembly away from the enclosure. Take care to not damage the gasket.





DISASSEMBLY PROCEDURES

11.3 Disconnect the ground connection wire. Retain the nut for re-use. Disconnect the wiring harness at J3.



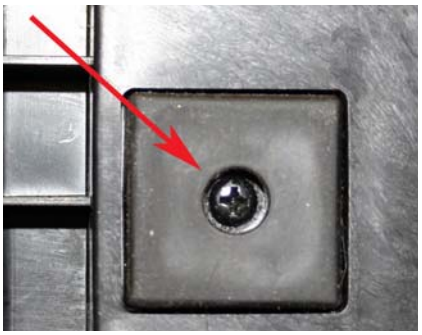
11.4 Disconnect the AC wiring harness at J1. Disconnect the three wire harnesses at J4, J5 and J7.
Note: J4 and J5 are located across the PCB assembly from each other. The J4 connector is red and the J5 connector is white. Lift off the SMPS / Amp assembly.

Important Note: The SMPS / Amplifier PCB assembly is a densely packed assembly with many components secured with glue to prevent vibration and buzzing. Component level repair is NOT recommended for this assembly.

F1 Subwoofer

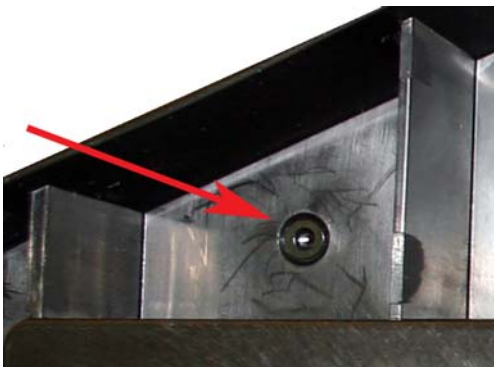
Important Note: The top, bottom and rear handles and their inserts are not replaceable for safety reasons. Do not attempt to remove them. They are not stocked as repair parts.

1. Foot Removal



1.1 Remove the one screw that secures the foot to the loudspeaker enclosure.

1.2 Lift off the foot.

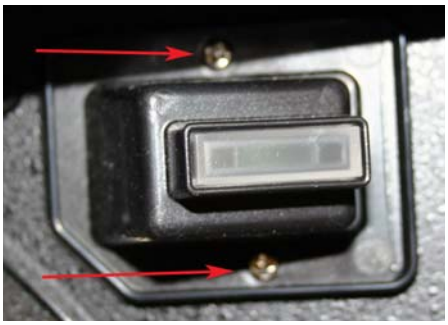


2. Grille Removal

2.1 At the bottom of the loudspeaker, below the cabinet edge, remove the two hex head T15 size screws that secure the grille to the loudspeaker enclosure.

DISASSEMBLY PROCEDURES

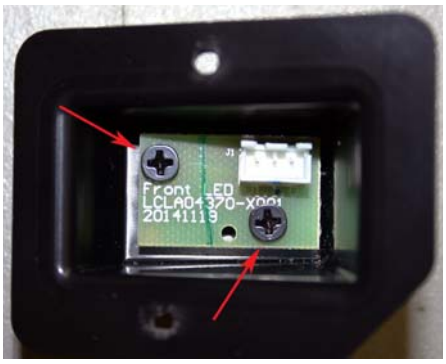
2.2 Pull the bottom edge of the grille away from the speaker, and slide it down until it comes out of the groove at the top of the enclosure. Lift off the grille.



3. LED PCB Removal

3.1 Remove the grille using procedure 2.

3.2 The LED PCB housing is located at the top right corner of the loudspeaker. Remove the two screws that secure the LED PCB housing to the enclosure.



3.3 Disconnect the wiring harness from the connector. Lift off the LED PCB housing.

3.4 Remove the two screws that secure the PCB assembly to the housing. Lift out the PCB assembly.

4. Woofer Removal

4.1 Remove the grille using procedure 1.

4.2 Remove the eight screws that secure the woofer you wish to remove. Lift out the woofer.

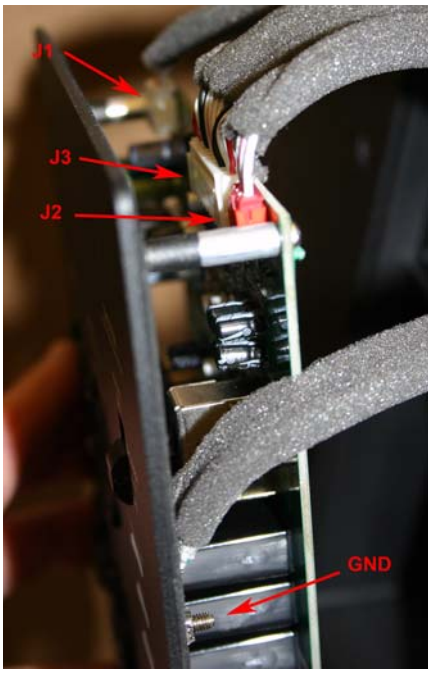
4.3 Disconnect the two Faston connections. Lift out the woofer.
Note: Be sure to observe polarity when re-connecting the woofer harness to the new woofer.

5. DSP / I-O PCB Assembly Removal

5.1 Remove the six screws that secure the DSP / I-O PCB assembly to the loudspeaker enclosure. Take care to not strip the screw heads.

DISASSEMBLY PROCEDURES

5.2 Carefully lift the DSP / I-O PCB assembly away from the enclosure. Take care to not damage the gasket.



5.3 Disconnect the ground connection wire. Retain the nut for re-use.

5.4 Disconnect the three wire harnesses at J1, J2 and J3. Lift off the DSP / I-O PCB assembly.

5.5 Remove the knob. Remove the eight screws that secure the XLR jacks to the input panel.

5.6 Turn over the DSP PCB subassembly. Remove the four screws that secure the PCB assembly to the input panel. Lift off the PCB assembly.

6. SMPS / Amplifier PCB Assembly Removal

Important Note: The SMPS / Amplifier PCB assembly is a densely packed assembly with many components secured with glue to prevent vibration and buzzing. Component level repair is NOT recommended for this assembly.

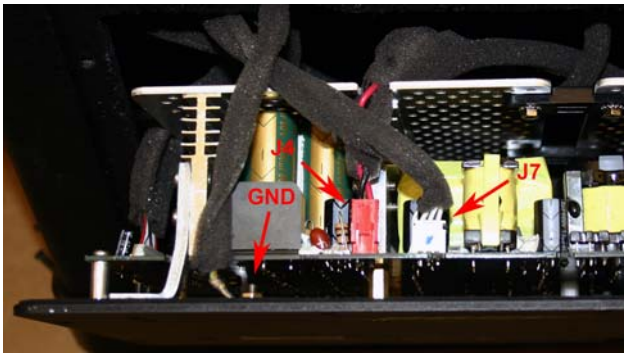
DISASSEMBLY PROCEDURES

6.1 Remove the eight screws that secure the SMPS / Amp assembly to the loud-speaker enclosure. Take care to not strip the screw heads.

6.2 Carefully lift the SMPS / Amp assembly away from the enclosure. Take care to not damage the gasket.

6.3 Disconnect the ground connection wire. Retain the nut for re-use.

6.4 Disconnect the three wire harnesses at J4, J5 and J7. Lift out the SMPS / Amp sub-assembly.
Note: J5 is located opposite J4 on the other side of the PCB assembly from the view shown at right.



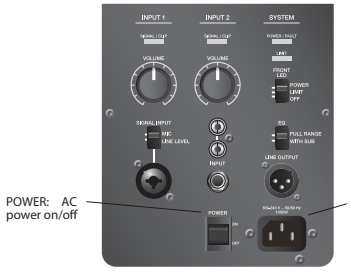
TEST PROCEDURES

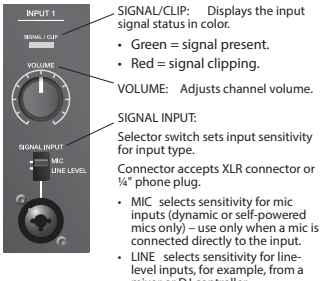
F1 Model 812 Loudspeaker

Equipment Required:

- Balanced audio signal generator
- Balanced input audio signal analyzer / dB meter
- Switching Amplifier filter, AP AUX-0025 or equivalent
- MP3 player for pink noise file
- Balanced XLR male cable
- Balanced XLR female cable
- Balanced 1/4"' TRS cable
- RCA cable
- AC line cord
- 2 - 4 ohm, 250 Watt load resistors

F1 Model 812 Control Panel





SIGNAL/CLIP: Displays the input signal status in color.
- Green = signal present.
- Red = signal clipping.

VOLUME: Adjusts channel volume.

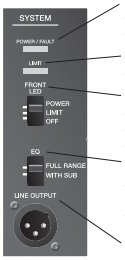
SIGNAL INPUT:
Selector switch sets input sensitivity for input type.
Connector accepts XLR connector or ¼" phone plug.
- MIC selects sensitivity for mic inputs (dynamic or self-powered mics only) – use only when a mic is connected directly to the input.
- LINE selects sensitivity for line-level inputs, for example, from a mixer or DJ controller.

SIGNAL/CLIP: Displays the input signal status in color.
- Green = signal present.
- Red = signal clipping.

VOLUME: Adjusts channel volume.

RCA connectors : Analog stereo input for audio sources such as DVD players, VCR players, video game consoles, DJ mixers, keyboards and other instruments.

¼" phone connector : Provides analog input for guitars and other instruments. Accepts TRS balanced or TS unbalanced cables.



POWER/FAULT:
- Blue = power on.
- Red = fault condition.

LIMIT:
- Red = system limiting.

Front LED:
- POWER enables front LED to indicate power status.
- LIMIT engages a limiting display on the front LED.
- OFF turns off the front LED.

EQ:
- FULL RANGE allows the loudspeaker to function without high-pass filtering.
- WITH SUB engages a high-pass filter when using the loudspeaker with the F1 subwoofer.

LINE OUTPUT:
- Balanced XLR line output provides a mix of input 1 and 2, post input faders. Can be used to daisy chain speakers together.

1. Power-up Test

1.1 Connect the unit under test to AC mains.

1.2 Turn on the AC power switch. Verify that there is no loud turn-on pop. Verify that the Power/Fault LED is lit BLUE. If it is RED, there is a failure and the unit will need to be troubleshot and repaired.

1.3 Place the Front LED switch to the POWER position. Verify that the front LED located at the lower right front of the speaker is lit blue.

1.4 Change the Front LED switch to the OFF position. Verify that the front LED is now OFF.

1.5 Change the Front LED switch to the LIMIT position. Leave it in this position for the following tests. You will be checking it for proper operation during these tests.

1.6 Turn the AC power switch OFF. Verify that there is no loud off-pop.

Input / Output - DSP PCB Tests

The following tests will check the performance of the Input / Output - DSP PCB assembly.

CAUTION: You **MUST NOT** test this PCB assembly while it is still connected to the SMPS / Amplifier PCB assembly. **Doing so could cause hearing damage due to high SPL output levels from the speaker.**

TEST PROCEDURES

- Remove the six screws that secure the I/O - DSP PCB to the enclosure. Disconnect the 10-pin wiring harness at J3. This will remove the I/O -DSP output and allow you to perform the following tests. Leave the other wiring harnesses connected. The I/O - DSP PCB uses the +/- 18VDC output from the SMPS/Amplifier PCB to operate.

Input 1 and 2 Tests

The below tests use Input 1 driven with a balanced differential signal and its volume control set to MAXIMUM (fully CW) and the Mic/Line Level switch set to the MIC position.

The Line Output XLR jack is used for all readings. The EQ switch is set to the FULL RANGE position. Input 2 volume control is set to MINIMUM (fully CCW).

2. Input 1 Gain Test

2.1 Input 1 to Line Output balanced. Set the Signal Input switch to the MIC setting. Set the Input 1 volume control to MAXIMUM (fully CW).

2.2 Apply a 1KHz, -30dBu signal to the Input 1 XLR connector.

2.3 Measure the output level at the Line Output XLR connector. It should be +6.0dBu, +/- 2dB.

2.4 Set the Signal Input switch to the LINE position. Measure the output level at the Line Output XLR connector. It should be -15.0dBu, +/- 2dB.

3. Input 1 LED Test

3.1 Set the Input 1 Signal Input switch to the LINE position. Set the Input 1 volume control to MAXIMUM (fully CW). Set the Front LED switch to the POWER position.

3.2 Apply a 1KHz, -48dBu signal to the Input 1 XLR connector.

3.3 Verify that the Input 1 Signal/Clip LED lights GREEN.

3.4 Measure the output level at the Line Output XLR connector. It should be -33dBu to 13dBu, +/-1dB.

3.5 Apply a 1KHz, +1dBu signal to the Input 1 XLR connector.

3.6 Verify that the Input 1 Signal/Clip LED lights RED.

3.7 Measure the output level at the Line Output XLR connector. It should be >16dBu, +/-1dB.

3.8 Verify that the Front LED switch is set to the POWER position. Verify that the Front LED is lit BLUE.

3.9 Move the Front LED switch to the LIMIT position. After about 3 seconds, it should get brighter and a little wider to indicate that the input limit has been reached. Remove the input signal. Verify that the Front LED returns to the same intensity as when the switch is in the POWER position.

3.10 Change the Front LED switch to the POWER position. Verify that the Front LED is still lit BLUE.

4. Maximum Input Voltage Test

4.1 Set the Input 1 MIC/LINE switch to the MIC position. Set the Input 1 volume control to MAXIMUM (fully CW).

4.2 Apply a 1KHz, -17dBu signal to the Input 1 XLR connector.

4.3 Measure the THD+N output level at the Line Output XLR connector. It should be < 0.1%.

5. Frequency Response Test

5.1 Set the Input 1 MIC/LINE switch to the MIC position. Set the Input 1 volume control to MAXIMUM.

5.2 Apply a 1KHz, -34dBu signal to the Input 1 XLR connector.

5.3 Reference a dB meter to the output level at the Line Output XLR connector.

5.4 Sweep the input signal from 20 Hz to 20 kHz. Verify that the output level is 0 dB +/- 0.5 dB.

Input 2 1/4" Phone Jack Tests

The below tests use the Input 2 1/4" TRS phone jack driven with a balanced differential signal and its volume control set to MAXIMUM and the EQ switch set to the FULL RANGE position.

The Line Output XLR jack is used for all readings. The Input 1 Volume control is set to MINIMUM.

6. Input 2 Gain Test

6.1 Input 2 to Line Output balanced. Set the Input 2 volume control to MAXIMUM.

6.2 Apply a 1KHz, -10dBu balanced input signal to the Input 2 1/4" TRS phone connector.

6.3 Measure the output level at the Line Output XLR connector. It should be 8.0dBu, +/- 2dB.

7. Input 2 LED Test

7.1 Set the Input 2 volume control to MAXIMUM.

7.2 Apply a 1KHz, -50dBu balanced signal to the Input 2 1/4" TRS phone jack.

7.3 Verify that the Input 2 Signal/Clip LED lights GREEN.

7.4 Measure the output level at the Line Output XLR connector. It should be -32dBu to 13dBu, +/-1dB.

7.5 Apply a 1KHz, -2dBu signal to the Input 2 1/4" phone jack.

7.6 Verify that the Input 1 Signal/Clip LED lights RED.

7.7 Measure the output level at the Line Out XLR connector. It should be >16dBu, +/-1dB.

8. Maximum Input Voltage Test

8.1 Set the Input 2 volume control to MAXIMUM (fully CW).

8.2 Apply a 1KHz, +6dBu signal to the Input 2 1/4" phone connector.

8.3 Measure the THD+N output level at the Line Out XLR connector. It should be < 0.1%.

9. Frequency Response Test

9.1 Set the Input 2 volume control to MAXIMUM.

9.2 Apply a 1KHz, -34dBu signal to the Input 2 1/4" phone connector.

9.3 Reference a dB meter to the output level at the Line Out XLR connector.

9.4 Sweep the audio input signal from 20 Hz to 20 kHz. Verify that the output level is 0 dB +/- 0.5 dB.

Input 2 RCA Jack Tests

The below tests use the Input 2 RCA jacks driven with a single-ended audio signal and the Input 2 volume control set to MAXIMUM with the EQ switch set to the FULL RANGE position.
Note: Connect only one RCA jack at a time for these tests.

The Line Output XLR jack is used for all readings. The Input 1 Volume control is set to MINIMUM.

10. Input 2 RCA Jacks Gain Test

10.1 Input 2 RCA jack to Line Out Balanced. Set the Input 2 volume control to MAXIMUM.

Note: The inputs to the Left and Right RCA jacks are summed internally. You will test each jack individually in the following tests. Do not connect both jacks at the same time.

10.2 Apply a 1KHz, -23dBu signal to the Input 2 Left RCA jack.

10.3 Measure the output level at the Line Output XLR connector. It should be 4.7dBu, +/- 2dB.

10.4 Apply a 1KHz, -23dBu signal to the Input 2 Right RCA jack.

10.5 Measure the output level at the Line Output XLR connector. It should be 4.7dBu, +/- 2dB.

11. Maximum Input Voltage Test

11.1 Set the Input 2 volume control to MAXIMUM.

11.2 Apply a 1KHz, -3.0dBu signal to the Input 2 Left RCA Jack.

11.3 Measure the THD+N output level at the Line Out XLR connector. It should be < 0.1%.

11.4 Apply a 1KHz, -3.0dBu signal to the Input 2 Right RCA Jack.

11.5 Measure the THD+N output level at the Line Out XLR connector. It should be < 0.1%.

12. Frequency Response Test

12.1 Set the Input 2 volume control to Maximum.

12.2 Apply a 1KHz, -34dBu signal to the Input 2 Left RCA jack.

12.3 Reference a dB meter to the output level at the Line Out XLR connector.

12.4 Sweep the audio input signal from 20 Hz to 20 kHz. Verify that the output level is 0 dB +/- 0.5 dB.

12.5 Apply a 1KHz, -34dBu signal to the Input 2 Right RCA jack.

12.6 Reference a dB meter to the output level at the Line Out XLR connector.

12.7 Sweep the audio input signal from 20 Hz to 20 kHz. Verify that the output level is 0 dB +/- 0.5 dB.

SMPS / Amplifier PCB Tests

IMPORTANT NOTE: These tests measure the output gain and THD+N levels of the SMPS / Amplifier PCB assembly. This PCB uses a switching power supply that will affect your output readings if you do not use a Switching Amplifier filter, such as an Audio Precision AUX-0025 or equivalent to remove the switching frequency artifacts from the output signal. The output gain levels may be correct, but the THD+N readings will be very high without the filter.

- The following tests will test the I/O - DSP PCB and the SMPS / Amplifier PCB together as a unit, disconnected from the drivers. The I/O - DSP PCB itself was tested in the previous test series.
- Remove the six screws that secure the I/O - DSP PCB to the enclosure. Re-connect the 10-pin wiring harness to connector J3. This will re-connect the I/O - DSP PCB to the SMPS / Amplifier PCB assembly. Ensure all other wiring harnesses are connected. Re-install the I/O - DSP PCB into the loudspeaker enclosure.
- Remove the eight screws that secure the SMPS / Amplifier PCB to the enclosure. Disconnect the wiring harnesses from connectors J4 and J5. This will disconnect the drivers from the amplifier outputs. Ensure all other wiring harnesses are connected.
- Connect 4 ohm, 250 Watt load resistors to the J4 (Twiddlers) and J5 (Woofer) outputs.
- Connect the measurement input lead for the DB / THD+N meter to the load resistors and through the AUX-0025 before connecting to the DB / THD+N meter.

CAUTION: Do not operate the unit under test into the load resistors for a long period of time while performing these tests. Doing so will overheat the load resistors.

TEST PROCEDURES

13. Noise Test

13.1 Short the input jacks at the Input 1 XLR connector and at the Input 2 1/4" TRS jack. Set the Input 1 and Input 2 volume controls to the NOON (12 o'clock) position.

13.2 Measure the output noise level at J4 and J5. It should be <-60dBu, A-Weighted with a 20Hz to 22kHz filter.

14. Gain and THD+N Tests

14.1 Set the Signal Input switch to the LINE position. Set the Input 1 volume control to MAXIMUM (fully CW). Set the Input 2 volume control to MINIMUM (fully CCW).

14.2 Apply a 6KHz, -20dBu signal to the Input 1 XLR connector.

14.3 Measure the output level at the J4 (Twiddler) connector. It should be +18.5dBu, +/- 2dB. Measure the THD+N level. It should be < 0.5%.

14.4 Apply a 100Hz, -20dBu signal to the Input 1 XLR connector.

14.5 Measure the output level at the J5 (Woofer) connector. It should be +25.0dBu, +/- 2dB. Measure the THD+N level. It should be < 0.5%.

15. Equalizer Curve Tests

15.1 These tests are performed using a balanced differential input to the Input 2 1/4" TRS balanced input jack. Set the input 2 volume control to MAXIMUM (fully CW). Set the Input 1 volume control to MINIMUM (fully CCW).

CAUTION: You **MUST** disconnect the AC line cord from the unit when connecting the driver wiring harnesses to the amplifier PCB outputs at J4 and J5 below. The smaller heatsink plate on the amplifier PCB has high voltage (400V) on it when the unit is connected to AC mains.

15.2 Connect a 4 Ohm, 250 Watt load resistor to the SMPS/Amplifier PCB's J4 (Twiddler) connector. Connect the signal measurement lead across the 4 ohm load and through the Switching Amplifier filter to the DB meter.

Apply a 20Hz, -25dBu signal to the Input 2 1/4" TRS balanced input jack. Ensure the output gain and THD+N levels are in accordance with the Twiddler output test table at right.

Input Frequency	Output Level at J4 (Twiddler Output)
500 Hz	Twiddler Out < 5 dBu
700 Hz	Twiddler Out = 6.0dBu +/-1dB
700 Hz	THD+N < 0.5%
1 KHz	Twiddler Out = 9.0dBu +/-1dB
1 KHz	THD+N < 0.5%
2 KHz	Twiddler Out = 11.4dBu +/-1dB
2 KHz	THD+N < 0.5%
4 KHz	Twiddler Out = 13.8dBu +/-1dB
4 KHz	THD+N < 0.5%
7 KHz	Twiddler Out = 15.7dBu +/-1dB
7 KHz	THD+N < 1.0%
10 KHz	Twiddler Out = 16.0dBu +/-1dB
10 KHz	THD+N < 0.5%
20 KHz	Twiddler Out = 9.4dBu +/-1dB
20 KHz	THD+N < 0.5%

TEST PROCEDURES

15.3 Connect a 4 Ohm, 250 Watt load resistor to the SMPS/Amplifier PCB's J5 (Woofer) connector. Connect the signal measurement lead across the 4 ohm load and through the Switching Amplifier filter to the meter.

15.4 Apply a 20Hz, -25dBu signal to the Input 2 1/4" TRS balanced input jack. Ensure the output gain and THD+N levels are in accordance with the Woofer output test table at right.

Input Frequency	Output Level at J5 (Woofer Output)
20 Hz	Bass Out < 5 dBu
30 Hz	Bass Out = 10.4dBu +/-1dB
30 Hz	THD+N < 1.0%
40 Hz	Bass Out = 19.5dBu +/-1dB
40 Hz	THD+N < 0.5%
50 Hz	Bass Out = 24.8dBu +/-1dB
50 Hz	THD+N < 0.5%
70 Hz	Bass Out = 27.0dBu +/-1dB
70 Hz	THD+N < 0.5%
100 Hz	Bass Out = 22.7dBu +/-1dB
100 Hz	THD+N < 0.5%
200 Hz	Bass Out = 18.5dBu +/-1dB
200 Hz	THD+N < 0.5%
400 Hz	Bass Out = 8.8dBu +/-1dB
400 Hz	THD+N < 1.0%
580 Hz	Bass Out = 7.0dBu +/-1dB
580 Hz	THD+N < 2.0%
740 Hz	Bass Out = 9.2dBu +/-1dB
740 Hz	THD+N < 2.0%
1 KHz	Bass Out = 5.2dBu +/-1dB
1 KHz	THD+N < 2.0%
2 KHz	Bass Out < 5 dBu

16. Hall Effect Sensor Test

IMPORTANT NOTE: Reconnect the wiring harness to J3 on the I/O - DSP PCB before beginning these tests. This will connect the output of the I/O - DSP PCB to the SMPS/Amplifier PCB.

Re-connect the loudspeaker wiring harnesses to J4 and J5 on the SMPS / Amplifier PCB to enable output to the drivers.

CAUTION: You **MUST** disconnect the AC line cord from the unit when connecting the driver wiring harnesses to the amplifier PCB outputs at J4 and J5 below. The smaller heatsink plate on the amplifier PCB has high voltage (400V) on it when the unit is connected to AC mains.

The F1 Model 812 Loudspeaker changes its high frequency response when the Twiddler® array is moved from the Straight position to the Reverse J, J, or C array patterns. Moving the Twiddler array to one of these positions is sensed by the Hall Effect sensors located at each end of the speaker enclosure. The DSP changes the EQ curve based on input from these sensors. Refer to page 7 of this manual for a description of the various Twiddler array positions.

16.1 Set the Twiddler array to the Straight array pattern.

16.2 Set the Input 2 volume control to 12 o'clock (mid-point). Set the Input 1 volume control to Minimum (fully CCW).

16.3 Apply a 100mv, pink noise signal to the Input 2 Left and Right RCA input jacks. Listen to the loudspeaker output. You can download a pink noise .mp3 file from the F1 Loudspeaker product page on the Bose Service web site at http://intranet.bose.com/tsg or http://serviceops.bose.com.

16.4 Move the Twiddler array to the Reverse J position. Verify that you can hear a difference in the pink noise response. It should be noticeable in a relatively quiet environment.

16.5 Move the Twiddler array to the J position. Verify that you can hear a difference in the pink noise response.

16.6 Move the Twiddler array to the C position. Verify that you can hear a difference in the pink noise response.

TEST PROCEDURES

17. Air Leak Test

17.1 Set the Input 1 MIC/LINE switch to LINE. Set the Input 1 volume control to Maximum.

17.2 Apply a balanced 48Hz, 55 mVrms sine wave to the Input 1 XLR connector.

17.3 Sweep the input frequency from 48Hz to 60Hz. Listen for air leaks around the cabinet gaskets. Replace any defective gaskets. **Note:** Not all gaskets are stocked as repair parts.

17.4 Listen for any rubbing or ticking of drivers. Replace any defective drivers.

18. Power Sweep Test

18.1 Set the Input 1 MIC/LINE switch to LINE. Set the Input 1 volume control to Maximum.

18.2 Apply a balanced 1kHz, 45 mVrms sine wave to Input 1 XLR connector.

18.3 Sweep the input frequency from 20Hz to 5kHz. Sweep time should be 4 seconds up and 4 seconds down. Listen carefully for buzzes, rattles, or other extraneous noises from the drivers or from the internal parts. **Note:** The whooshing noise from the port from 40 to 50 Hz is acceptable. Replace any driver that has a buzzing noise, or is defective.

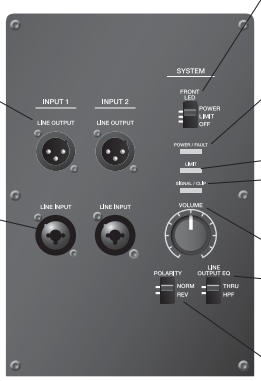
IMPORTANT NOTE: After completion of these test procedures, perform the Hi-Pot and Ground Bond tests, which are located on page 85 of this manual. These tests are mandatory and must be completed before returning the product to the customer.

F1 Subwoofer Tests

Equipment Required:

- Balanced audio signal generator
- Balanced input audio signal analyzer / dB meter
- Switching Amplifier filter, AP AUX-0025 or equivalent
- Balanced XLR male cable
- Balanced XLR female cable
- AC line cord
- 2 - 4 ohm, 250 Watt load resistors

F1 Subwoofer Control Panel



LINE OUTPUT 1 & 2: Individual outputs that provide balanced line output signals (pre-fader) that can be sent to powered loudspeakers or additional subwoofers.

Note : When the LINE OUTPUT EQ selector switch is set to THRU, the LINE OUTPUT signal will be full range.

LINE INPUT 1 & 2: Combination XLR – ¼" phone connector inputs that accept line level signals.

FRONT LED : selector switch:

- POWER enables LED to indicate power status.
- LIMIT enables LED to indicate limiting.
- OFF turns off LED.

POWER/FAULT : indicates power/fault status

- Blue = power on.
- Red = fault condition.

LIMIT: Red = system limiting.

SIGNAL/CLIP: Displays the input signal status in color.

- Green = signal present.
- Red = signal clipping.

VOLUME – Adjusts subwoofer volume.

LINE OUTPUT EQ:

- THRU passes input signal to the output with no filtering.
- HPF passes input through a high-pass filter.

POLARITY:

- NORM allows normal operation.
- REV causes bass phase cancellation when the F1 Model 812 loudspeaker is mounted on the supplied stand. May be used to better align the bass when the subwoofer is located further away from the F1 Model 812 loudspeaker.

1. Power-up Test

1.1 Connect the unit under test to AC mains.

1.2 Turn on the AC power switch. Verify that there is no loud turn-on pop. Verify that the Power/Fault LED is lit BLUE. If it is RED, there is a failure and the unit will need to be troubleshot and repaired.

1.3 Place the Front LED switch to the POWER position. Verify that the front LED located at the lower right front of the speaker is lit blue.

1.4 Change the Front LED switch to the OFF position. Verify that the front LED is now OFF.

1.5 Change the Front LED switch to the LIMIT position. Leave it in this position for the following tests. You will be checking it for proper operation during these tests.

1.6 Turn the AC power switch OFF. Verify that there is no loud off-pop.

Input / Output - DSP PCB Tests

The following tests will check the performance of the Input / Output - DSP PCB assembly.

CAUTION: You **MUST NOT** test this PCB assembly while it is still connected to the SMPS / Amplifier PCB assembly. **Doing so could cause hearing damage due to high SPL output levels from the speaker.**

- Remove the eight screws that secure the I/O - DSP PCB to the enclosure. Disconnect the 10-pin wiring harness at J3. This will remove the I/O -DSP output and allow you to perform the following tests. Leave the other wiring harnesses connected. The I/O - DSP PCB uses the +/- 18VDC output from the SMPS/Amplifier PCB to operate.

Input 1 and 2 Tests

The below tests use the Input 1 jack driven with a balanced differential signal and its volume control set to NOON (12 o'clock) and the Line Output EQ switch set to the THRU position.

The Input 1 Line Output XLR jack is used for all readings.

2. Input 1 to Output 1 Gain Test

2.1 Apply a balanced 1 kHz, 0 dBu signal to the Input 1 XLR connector.

2.2 Measure the output level at the Input 1 Line Output connector. It should be 0.0dBu, +/- 2dB.

3. Input 1 LED Test

3.1 Apply a balanced 100 Hz, -30 dBu signal to the Input 1 XLR connector.

3.2 Measure the output level at the Input 1 Line Output connector. It should be -30 dBu, +/- 1 dB.

3.3 Verify that the Signal/Clip LED is lit GREEN.

3.4 Slowly increase the input signal level from -30 dBu to +20 dBu.

3.5 Measure the output Level at the Input 1 Line Output connector. It should be +20 dBu, +/- 1 dB. Verify that the Signal/Clip LED is still lit GREEN.

3.7 Slowly increase the input signal level above +20 dBu. Verify that the Signal/Clip LED now turns RED.

3.8 Measure the output level at the Input 1 Line Output connector. It should be equal to the input signal level, +/- 1 dB.

4. Maximum Input Voltage Test

4.1 Apply a balanced 1 kHz, +24 dBu signal to the Input 1 XLR connector.

4.2 Measure the THD+N level at the Input 1 Line Output connector. It should be < 0.01%.

5. Input 1 Frequency Response Through Pre-amp

5.1 Ensure that the Line Output EQ switch on the input panel is in the THRU position.

5.2 Apply a balanced 20 Hz, 0 dBu signal to the Input 1 XLR connector.

5.3 Measure the output level at the Input 1 Line Output connector. It should be 0 dBu, +/- 0.5 dB.

5.4 While measuring the output level, slowly increase the input frequency from 20 Hz to 20 kHz. The output level should be 0 dBu, +/- 0.5 dB.

6. Input 1 High Pass Frequency Response Test

6.1 Move the Line Output EQ switch to the HPF position.

6.2 Apply a balanced 20 kHz, +20 dBu signal to the Input 1 XLR connector.

6.3 Measure the output level at the Input 1 Line Output connector. It should be +20 dBu, +/- 1 dB.

Frequency Input	Output Level
Freq = 20KHz	20 dBu +/-1dB
Freq = 10KHz	20 dBu +/-1dB
Freq = 5KHz	20 dBu +/-1dB
Freq = 1KHz	20 dBu +/-1dB
Freq = 500 Hz	20 dBu +/-1dB
Freq = 200 Hz	19 dBu +/-1dB
Freq = 100 Hz	11 dBu +/-1dB
Freq = 70 Hz	1.5 dBu +/-1dB
Freq = 50 Hz	-9.5 dBu +/-1dB
Freq = 30 Hz	-27 dBu +/-1dB

6.4 Change the input frequency in accordance with the table above right. Verify that the output level at the Input 1 Line Output connector is as listed, +/- 1 dB.

6.5 Repeat tests 2 through 6 for the Input 2 XLR connector. Outputs are measured at the Input 2 Line Output jack.

SMPS / Amplifier PCB Tests

The following tests will test the I/O - DSP PCB and the SMPS / Amplifier PCB together as a unit, disconnected from the woofers. The I/O - DSP PCB itself was tested in the previous test series.

- Remove the six screws that secure the I/O - DSP PCB to the enclosure. Re-connect the 10-pin wiring harness to connector J3. This will re-connect the I/O - DSP PCB to the SMPS / Amplifier PCB assembly. Ensure all other wiring harnesses are connected. Re-install the I/O - DSP PCB into the loudspeaker enclosure.

TEST PROCEDURES

- Remove the eight screws that secure the SMPS / Amplifier PCB to the enclosure. Disconnect the wiring harnesses from connectors J4 and J5. This will disconnect the woofers from the amplifier outputs. Ensure all other wiring harnesses are connected.

CAUTION: You **MUST** disconnect the AC line cord from the unit when connecting the driver wiring harnesses to the amplifier PCB outputs at J4 and J5 below. The smaller heatsink plate on the amplifier PCB has high voltage (400V) on it when the unit is connected to AC mains.

- Connect a 3 ohm, 250 Watt load resistor to each of the J4 (upper woofer) and J5 (lower woofer) connectors on the SMPS / Amplifier PCB assembly.

CAUTION: Do not operate the unit under test into the load resistors for a long period of time while performing these tests. Doing so will overheat the load resistors.

Input 1 Tests

7. Input 1 and 2 Gain and THD+N Tests

7.1 Set the Input 1 trim control to MAXIMUM (fully CW). Set the Input 2 trim control to MINIMUM (fully CCW).

7.2 Apply a balanced 50 Hz, -2 dBu signal to the Input 1 XLR connector.

7.3 Measure the output level at the J4 (upper woofer) connector. It should be +32.2 dBu, +/- 1 dB. Measure the THD+N level. It should be < 0.1%.

7.4 Measure the output level at the J5 (lower woofer) connector. It should be +32.2 dBu, +/- 1 dB. Measure the THD+N level. It should be < 0.1%.

8. Equalizer Tests

8.1 Set the Input 2 trim control to MAXIMUM (fully CW). Set the Input 1 trim control to MINIMUM (fully CCW).

8.2 Apply a balanced 20 Hz, -7 dBu signal to the Input 2 XLR connector.

Test continued on next page ------->

TEST PROCEDURES

8.3 Measure the output gain and THD+N levels at the J4 (upper woofer) and J5 (lower woofer) connectors. Ensure they are as specified in the below table.

Input Frequency	J4 (Upper Woofer) Output Levels	J5 (Lower Woofer) Output Levels
20 Hz	Bass Out < 0 dBu	Bass Out < 0 dBu
30 Hz	Bass Out = 14.5dBu +/-1dB	Bass Out = 14.5dBu +/-1dB
30 Hz	THD+N < 0.5%	THD+N < 0.5%
40 Hz	Bass Out = 26.8dBu +/-1dB	Bass Out = 26.8dBu +/-1dB
40 Hz	THD+N < 0.1%	THD+N < 0.1%
50 Hz	Bass Out = 30.6dBu +/-1dB	Bass Out = 30.6dBu +/-1dB
50 Hz	THD+N < 0.1%	THD+N < 0.1%
60 Hz	Bass Out = 28.6dBu +/-1dB	Bass Out = 28.6dBu +/-1dB
60 Hz	THD+N < 0.1%	THD+N < 0.1%
70 Hz	Bass Out = 26.2dBu +/-1dB	Bass Out = 26.2dBu +/-1dB
70 Hz	THD+N < 0.1%	THD+N < 0.1%
80 Hz	Bass Out = 24.2dBu +/-1dB	Bass Out = 24.2dBu +/-1dB
80 Hz	THD+N < 0.1%	THD+N < 0.1%
90 Hz	Bass Out = 22.3dBu +/-1dB	Bass Out = 22.3dBu +/-1dB
90 Hz	THD+N < 0.5%	THD+N < 0.5%
100 Hz	Bass Out = 20.1dBu +/-1dB	Bass Out = 20.1dBu +/-1dB
100 Hz	THD+N < 0.5%	THD+N < 0.5%
140 Hz	Bass Out = 8.3dBu +/-1dB	Bass Out = 8.3dBu +/-1dB
140 Hz	THD+N < 0.5%	THD+N < 0.5%
200 Hz	Bass Out = 3.9dBu +/-1dB	Bass Out = 3.9dBu +/-1dB
200 Hz	THD+N < 0.5%	THD+N < 0.5%
500 Hz	Bass Out < 0 dBu	Bass Out < 0 dBu
1 KHz	Bass Out < 0 dBu	Bass Out < 0 dBu
2 KHz	Bass Out < 0 dBu	Bass Out < 0 dBu
5 KHz	Bass Out < 0 dBu	Bass Out < 0 dBu
10 KHz	Bass Out < 0 dBu	Bass Out < 0 dBu
20 KHz	Bass Out < 0 dBu	Bass Out < 0 dBu

9. Front LED Test

9.1 Verify front baffle LED operation by switching from OFF-LIMIT-POWER. The Blue LED located at the lower right corner of the enclosure should be illuminated with the same intensity in both the LIMIT and POWER settings.

9.2 Apply a balanced 100 Hz, +20 dBu signal to the Input 1 XLR connector. Slowly increase the input signal level above +20 dBu. Verify that the Signal/Clip LED now turns RED.

9.3 Move the Front LED switch to the LIMIT position. After about 3 seconds, it should get brighter and a little wider to indicate that the input limit has been reached. Remove the input signal. Verify that the Front LED returns to the same intensity as when the switch is in the POWER position.

TEST PROCEDURES

IMPORTANT NOTE: Reconnect the wiring harnesses to J4 and J5 on the SMPS / Amplifier PCB before beginning the below tests. This will allow output from the woofers.

CAUTION: You **MUST** disconnect the AC line cord from the unit when connecting the driver wiring harnesses to the amplifier PCB outputs at J4 and J5 below. The smaller heatsink plate on the amplifier PCB has high voltage (400V) on it when the unit is connected to AC mains.

10. Air Leak Test

10.1 Set the Input 1 MIC/LINE switch to LINE. Set the Input 1 volume control to Maximum.

10.2 Apply a balanced 50Hz, 100 mVrms sine wave to the Input 1 XLR connector.

10.3 Sweep the input frequency from 50Hz to 60Hz. Listen for air leaks around the cabinet gaskets. Replace any defective gaskets. **Note:** Not all gaskets are stocked as repair parts.

10.4 Listen for any rubbing or ticking of drivers. Replace any defective drivers.

11. Power Sweep Test

11.1 Set the Input 1 volume control to Maximum.

11.2 Apply a balanced 80 Hz, 100 mVrms sine wave to Input 1 XLR connector.

11.3 Sweep the input frequency from 20Hz to 300 Hz, log sweep. Sweep time should be 4 seconds up and 4 seconds down. Change the oscillator frequency slowly from 20 Hz to 300 Hz.

11.4 Listen carefully for buzzes, rattles, or other extraneous noises from the driver or from the internal parts. **Note:** The whooshing noise from the port around 40 Hz is acceptable. Replace any driver that has a buzzing noise, or is defective.

IMPORTANT NOTE: After completion of these test procedures, perform the Hi-Pot and Ground Bond tests, which are located on page 85 of this manual. These tests are mandatory and must be completed before returning the product to the customer.

TEST PROCEDURES

Hi-Pot Test

THIS IS A MANDATORY TEST

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

This test requires a Hi-Pot tester with a ground bond attachment to perform this test. Connections:

The Hi-Pot tester connects to the unit under test (UUT) by means of a wiring harness. The AC line cord of the UUT plugs into the Hi-Pot tester AC adapter box. The return line connects to all output connectors.

Hi-Pot Tester Settings:

Note: This Hi-Pot test uses two different voltage levels to test leakage current at two locations to ensure there is no danger to the customer once they receive their system back from repair. Be sure to perform the test at both voltage levels and test locations on the product.

All units - 1500 VAC, rise time = 1 second, dwell = 3 seconds, current limit = 3.5 mA

- Connect the AC mains cord to loudspeaker under test. Plug the other end of the AC cord into the Hi-Pot tester AC adapter box. The AC adapter box connects to the HIGH VOLTAGE (HV) connection on the Hi-Pot tester.
- Connect the Hi-Pot tester RETURN line to all **earthed parts**.
- With the tester set to the above parameters, perform the test. If the unit fails, troubleshoot it and repair the problem. Once the unit is repaired, repeat this test. If it passes at this level, perform the higher level test listed below.

All units - 2500 VAC, rise time = 1 second, dwell = 3 seconds, current limit = 5.0 mA

- Connect the Hi-Pot tester RETURN line to all **output connectors.**
- With the tester set to the above parameters, perform the test. If the unit fails, troubleshoot it and repair the problem. Once the unit is repaired, repeat the Hi-Pot and the ground bond tests to ensure the unit is safe to return to the customer.

Ground Bond Test

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

Ground Bond Tester Settings:

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

- Connect the AC mains cord to the back of the loudspeaker under test. Plug the other end of the AC cord into the ground bond test box.
- With the tester set to the above parameters, perform the test. If the unit fails, remove the top cover and repair the problem. Once the unit is repaired, repeat the Hi-Pot and the ground bond tests to ensure the unit is safe to return to the customer.

SOFTWARE UPDATE PROCEDURE

Required Items:

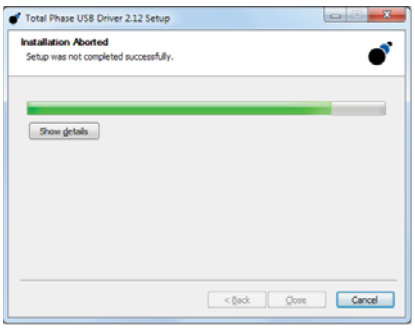
- F1 Loudspeaker Update Cable - Bose® part number 755129-001S
- F1 Loudspeaker I2C/SPI Update Adapter - Bose part number 755132-001S
- F1 Loudspeaker Updater Program - Available on the F1 Service web page
- USB A/B Cable
- Windows® Laptop or PC

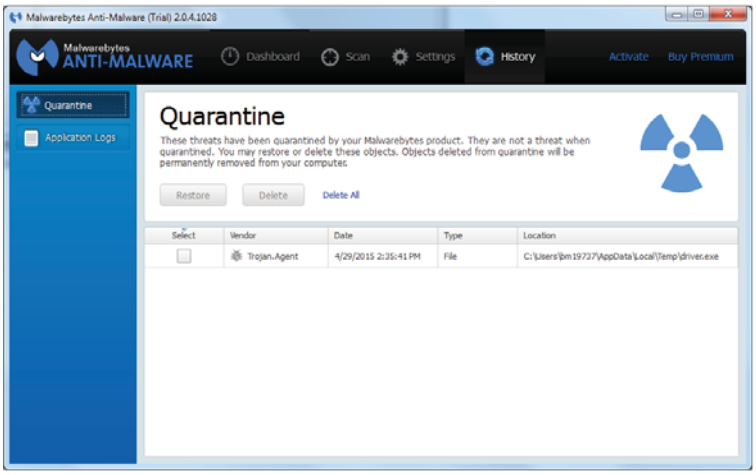
1. F1 Loudspeaker I2C/SPI Adapter Driver Installation

You will need to install the drivers for the I2C/SPI adapter before you can use the updater software. The drivers can be downloaded from the F1 Loudspeaker product page on the Bose Service web sites at http://intranet.bose.com/tsg or http://serviceops.bose.com.

The I2C/SPI adapter used with the updater software is made by Total Phase Inc. (http://www.totalphase.com). The adapter model name is the Aardvark I2C/SPI Adapter.

1.1 Download the adapter drivers and install them. If you have MalwareBytes software installed and running on your PC, it will detect the TotalPhase USB 'driver.exe' installer for the Aardvark I2C/SPI device as containing a 'Trojan.Agent': This is False, you can safely ignore it. You will see the following dialog boxes indicating this issue. See below.





2. F1 Updater Software Installation

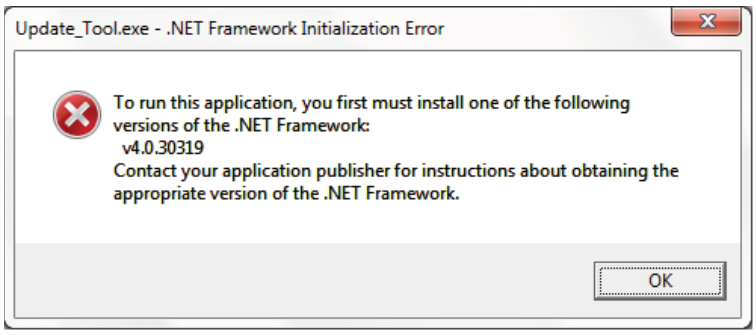
You will need to download and install the Updater software to your laptop or PC. The software is located on the F1 Model 812 and F1 Subwoofer product page on the Bose Service web sites. The link to the F1 Loudspeaker product page is located on the Professional Products page.

2.1 Download the software .zip file to your desktop or other folder. Extract the .zip file and place the folder "i.e. Update_Tool_v1.4" in a permanent directory on the computer (for example, C:/ rather than in the Downloads folder. Be sure that all files in the folder remain together. The Aardvark.dll file must remain in the same directory as the Update_Tool.exe file in order for the updater to work properly.

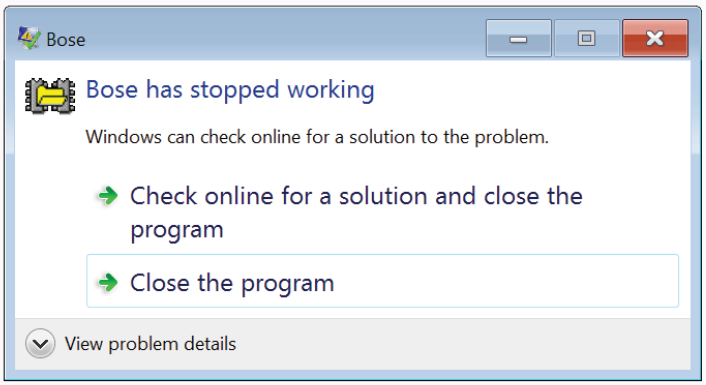
SOFTWARE UPDATE PROCEDURE

2.2 Once the .zip file is extracted, Double click “Update_Tool.exe” to run the F1 Loudspeaker updater program.

Note: Microsoft .NET v4.5.1 or newer is required for the Update Tool to run. If the below alert dialog box is received, update Microsoft.NET.



If the tool does not run with the following error:



Verify that the Aardvark.dll file is in the same directory as the Update_Tool.exe file.

3. Using the F1 Updater Program

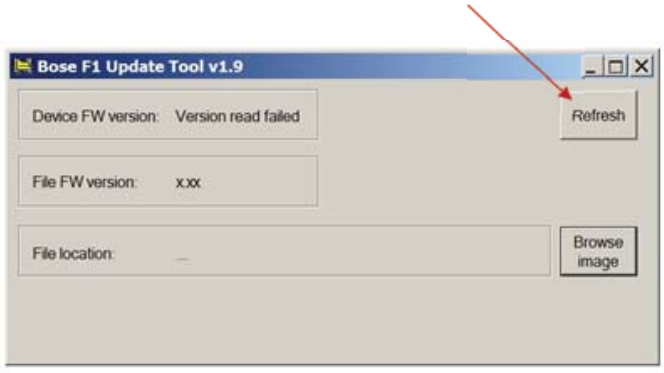
Once the updater and associated drivers are correctly installed, the program can be launched to update the software on the F1 Loudspeakers.

3.1 Using the USB A/B cable connect the F1 I2C/SPI (Aardvark) adapter into an open USB port on the PC. Connect the 10-pin connector on the I2C/SPI adapter to the F1 Update Cable.

Depending on which speaker you are testing, connect the male and female XLR connectors to the loudspeaker. Refer to the connection instructions on the following pages.

3.2 Double-click the Update_Tool.exe to open the program.

3.3 Once the program is open and with the Aardvark USB and all cabling connected to the loudspeaker, Click on the Refresh Button in the program. See below. This is needed to activate the Aardvark I2C/SPI adapter.
IMPORTANT NOTE: If you do not perform this step, the speaker will not go into Update mode later in this procedure.

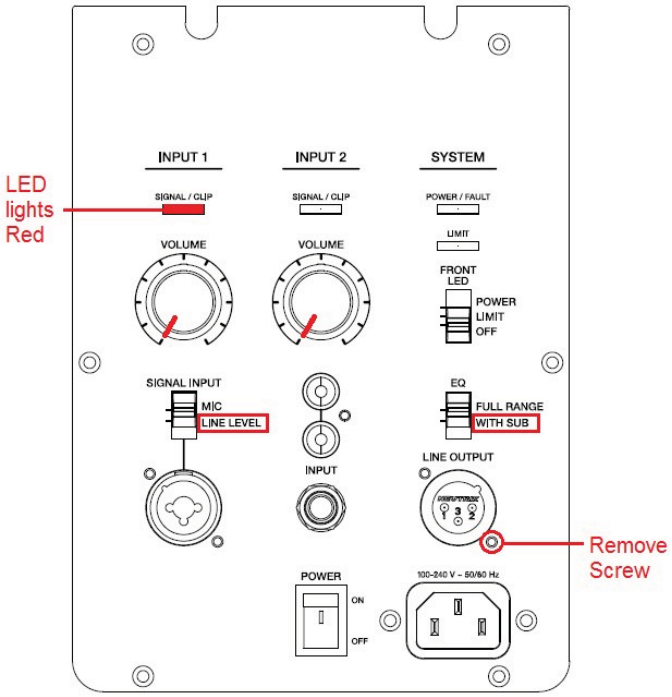


3.4 If not yet done, connect the Aardvark I2C/SPI adapter to the F1 Loudspeaker.

3.5 Configure the F1 Loudspeaker for update using the below steps.

4. Configuring the F1 Loudspeaker for the Updater program.

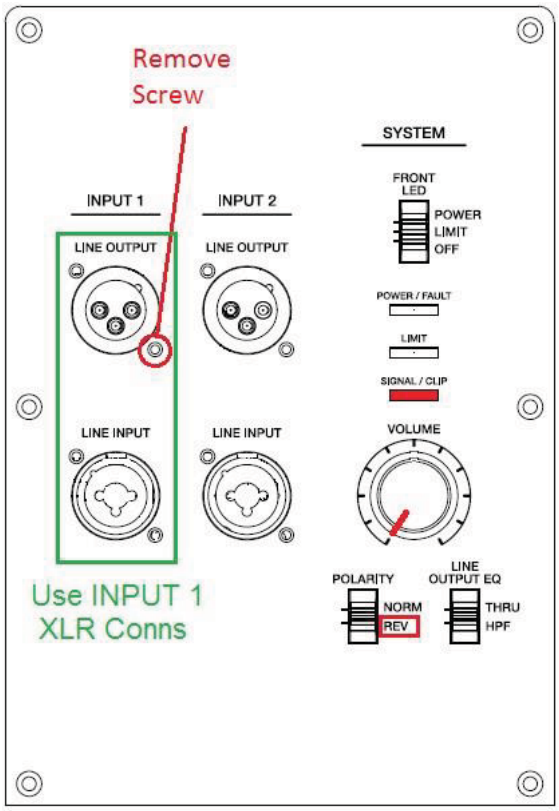
Mid-High Array (MHA) DSP Panel:
1. Power on the Loudspeaker by turning on the AC power switch.
2. Turn both VOLUME controls to OFF.
3. Set the EQ switch to WITH SUB.
4. Set the Signal Input switch to LINE.
5. Remove the screw as shown at right.
6. Verify that the Updater cable is connected to the SIGNAL INPUT and LINE OUTPUT XLR connectors.
7. Insert a tooth pick or other thin stick into the hole from the removed screw and press the button on the PC board. You will feel the switch “click”. The INPUT 1 Red CLIP LED will light and the Programming Mode will be Enabled.
Note: There is a 10 second time delay from the time the unit is first powered on to when it will allow the Input 1 Red CLIP LED to light.
Once in programming mode, the tooth pick can then be removed. The Red CLIP LED will stay lit, keeping the F1 in Programming Mode until the Unit is Powered Off after programming is complete.



SOFTWARE UPDATE PROCEDURE

F1 Subwoofer DSP Panel:

1. Power on the Loudspeaker by turning on the AC power switch.
2. Turn the VOLUME control OFF.
3. Set the POLARITY switch to REV.
4. Verify that the Updater cable is connected to the INPUT 1 XLR connectors; SIGNAL INPUT and LINE OUTPUT as shown at right.
5. Remove the screw under the Input 1 Line Output jack as shown at right.
6. Insert a tooth pick or other thin stick into the hole from the removed screw and press the button on the PC board located under this hole to enable Programming Mode. You will feel the switch “click”. The Red SIGNAL/CLIP LED will Light.
Note: There is a 10 second time delay from the time the unit is first powered on to when it will allow the Red CLIP LED to light.



The Red CLIP LED will stay lit, keeping the F1 in Programming Mode until the loudspeaker is powered OFF after programming is complete.

5. Running the F1 Loudspeaker Updater Program

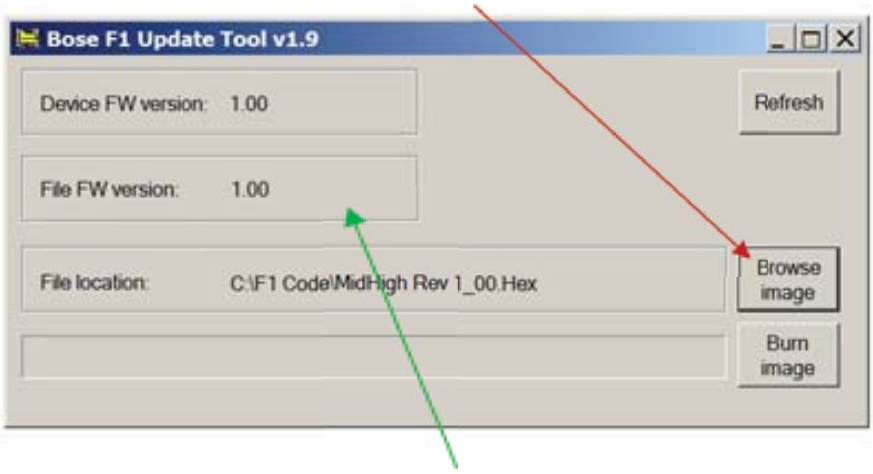
Once the loudspeaker is in Programming Mode, you can then check the speaker’s software revision level and update it if needed. Follow the below steps.

5.1 While in Programming Mode, click the Refresh button on the Updater program

This will return the current revision of the software loaded into the F1: Device FW Version.

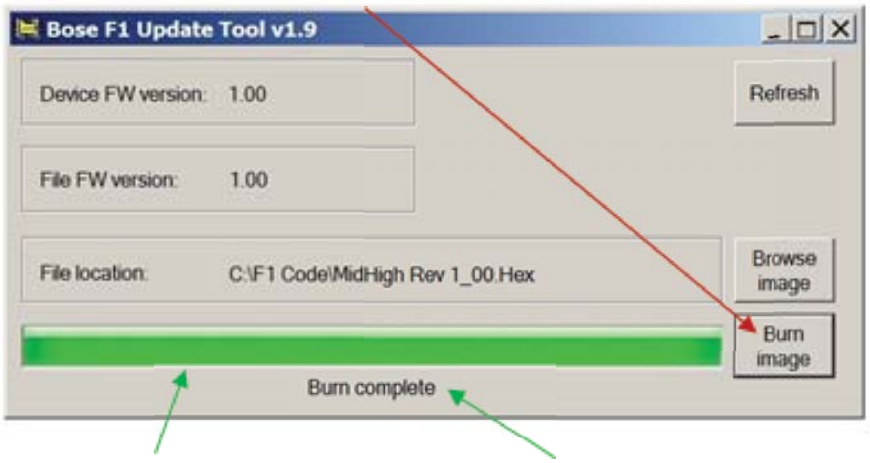
SOFTWARE UPDATE PROCEDURE

5.2 Click on the Browse image button to select a new software revision to be loaded.



Browse to the location of the update file you wish to load. Click on the file name. The revision level of the new software File FW version will then be shown.

5.3 Click on the Burn Image button to the new revision of software into the F1 Loudspeaker. You will see the below progress bar as the new software is loaded.



The Green Bar will progress as the new software revision is loaded, Burn Complete is displayed when completed.

END OF PROCEDURE.

Troubleshooting

If you experience problems while using this product, try the following solutions. The recommended troubleshooting tools include a spare AC power cord and extra XLR and 1/4" phone plug cables.

Problem	What to do
Loudspeaker is plugged in, power switch is on, but power LED is off.	• Make sure the power cord is fully engaged into both the F1 Model 812 loudspeaker and the AC outlet. • Make sure you have power at the AC outlet. Try operating a lamp or other equipment from the same AC outlet. • Try a different power cord.
Power LED is on (green),but no sound.	• Make sure the VOLUME control is turned up. • Make sure volume control is turned up on your instrument. • Make sure your instrument or audio source is plugged into the appropriate input connector. • If the F1 Model 812 loudspeaker is receiving input from the F1 subwoofer, make sure the subwoofer is turned on.
Instrument or audio source sounds distorted.	• Lower the volume of the connected audio source. • If you are connected to an external mixer: – Make sure input gain to the mixer channel is not clipping. – Make sure the equalization controls for low, mid, and high on the mixer are set to mid position. • Reduce the output of the mixer.
Microphone is encountering feedback.	• Reduce the input gain on the mixer. • Try positioning the microphone so it nearly touches your lips. • Try a different microphone. • Increase the distance from the loudspeaker to the microphone. • If using a vocal effects processor, make sure it is not contributing to the feedback.
Poor Bass Response	• If using the F1 Model 812 loudspeaker as a standalone, make sure the EQ switch is set to FULL RANGE. • If using the F1 Model 812 loudspeaker with the F1 Subwoofer, check to see if the POLARITY switch is in NORMAL mode. If there is a fair amount distance between the F1 subwoofer and the F1 Model 812 loudspeaker, setting the POLARITY switch to REV may improve bass. • If using two F1 subwoofers, make sure that the POLARITY switch is in the same position on each subwoofer.
Excessive Noise or System Hum	• When connecting a mic to the F1 Model 812 loudspeaker, make sure the INPUT 1, SIGNAL INPUT switch is set to MIC. • Check to make sure that all system connections are secure. Lines that are not completely connected could create noise. • If using a mixer, external source or receiving input from the F1 subwoofer, make sure the INPUT 1 SIGNAL INPUT switch on the F1 Model 812 loudspeaker is set to LINE. • For best results, use balanced (XLR) connections on the system inputs. • Keep all signal-carrying cables away from AC power. • Light dimmers can cause hum in loudspeaker systems. To avoid this, plug the system into a circuit that is not controlling lights or dimmer packs. • Plug the audio system components into power outlets that share a common ground. • Check cables at mixer inputs by muting channels. If the hum goes away, replace the cable at that mixer channel.

LED Indicators

The following table describes LED behavior on both the F1 Model 812 Loudspeaker and F1 Subwoofer.

Type	Location	Color	Behavior	Indication	Required Action
Front LED (Power)	Front Grille	Blue	Steady state	Loudspeaker is on	None
		Blue	Pulsing	Limiter is active, amplifier protection engaged	Reduce volume or source input level
SIGNAL/CLIP	INPUT 1/2	Green (nominal)	Flicker/Steady state	Input signal present	Adjust to desired level
		Red	Flicker/Steady state	Input signal too high	Reduce volume or source input level
POWER/FAULT	Rear panel	Blue	Steady state	Loudspeaker is on	None
		Red	Steady state	Amplifier thermal shutdown active	Turn loudspeaker off
LIMIT	Rear panel	Amber	Pulsing/Steady state	Limiter is active, amplifier protection engaged	Reduce volume or source input level

Service Manual Revision History

Date	Revision Level	Description of Change	Change Driven By	Pages Affected
8/15	00	Document released at revision 00.	Service manual release	All
9/15	01	- Added new Hi-Pot test requirements - Added new disassembly steps	Test spec change New process	85 62
1/16	02	Subwoofer foot and woofer screw part number changed.	New part number	21
3/16	03	New I/O-DSP PCB assembly part number	New part number	21

SPECIFICATIONS AND FEATURES SUBJECT TO CHANGE WITHOUT NOTICE

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Framingham Massachusetts USA 01701

P/N: 731419-SM Rev. 03; 3/2016 (P)
http://serviceops.bose.com