

## Companion<sup>®</sup> 20 Multimedia Speaker System



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**CAUTION: The Companion 20® multimedia speakers system contains no user-serviceable parts. To prevent warranty infractions, refer servicing to factory service.**

PROPRIETARY INFORMATION

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


## Part List Notes

1. This part is not normally available from Customer Service. Approval from the Field Service Manager is required before ordering.
2. The individual parts on the PCBs are listed in the Electrical Part list.
3.  This part is critical for safety purposes. Failure to use a substitute replacement with the same safety characteristics as the recommended replacement part might create shock, fire and/or other hazards.
4. This part is referenced for informational purposes only. It is not stocked as a repair part. Refer to the next higher assembly for a replacement part.
5. The part number listed is an assembly part number. The individual parts of the assembly might not be available separately.

# WARRANTY

The Companion® 20 multimedia speaker system is covered by a 1-year transferrable, limited warranty.

## SAFETY INFORMATION

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.

### Product Description

The Companion 20 is a two-piece computer speaker system.

- Acoustic performance that meets or exceeds Wave Music System
- An elegant industrial design, form factor, and controls
- An industrial design that evolves the Companion family line
- Two 3.5 mm inputs and one headphone jack
- Includes a control pod similar to Companion 3 and 5

### Serviceability

The system is not serviceable, the rear enclosure is attached to the front panel and it is not possible to repair to board or component level. Left and right speakers, control pod, speaker grille, power supply and audio cable are available as service parts (see page 5).

### Serial Number and Date of Manufacture Information

The date of manufacture (DOM) and the product code are encoded within the serial number located on the product label.

Serial Number Example -

055102Z10630052BE

The first 6 characters identify the product code - 055102

Characters 8 to 11 identify the DOM - 1063  
1063 = the 63rd day of 2011

# SPECIFICATIONS

## Mechanical

Dimensions: Individual Speaker: 8.6" H x 3.5" W x 4.4" D  
(22 x 9 x 15 cm)

Weight: One speaker: 2.5 lbs (1.1 kg)

Control Pod: 0.5 lbs (.2 kg)

## Electrical

Power Pack Rating: AC Input: 100 VAC to 240VAC  
AC Input Freq: 50Hz to 60Hz  
AC Input Current: 1.5A (rms) max. for 115VAC  
.8A (rms) max. for 230VAC

Speaker Inputs: Input Power: 18V, 2.0A

Input Signal: 2.25V Maximum input

Driver Complement: Two 2.75 inch (70mm) high excursion, wide-range transducers

# PACKAGING PART LIST

Companion® 20

Item	Description	Part Number	Notes
1	PC SPEAKER ASSY, LEFT	346248-002S	
2	PC SPEAKER ASSY, RIGHT	346248-001S	
3	GRILLE ASSY (includes logo and tape)	346310-001S	
4	CONTROL POD	346309-001S	
5	POWER SUPPLY	330733-0020	3, ⚠
6	INPUT CABLE	346312-001S	
7	LINE CORD, US LINE CORD, EU LINE CORD, UK LINE CORD, JP LINE CORD, AP	279101-1310 280135-1310 280138-1310 280136-1310 284243-1310	3, ⚠
8	CARTON	342934-0010	
9	PACKAGING TRAY, TOP	345628-0010	
10	PACKAGING TRAY, BOTTOM	345629-0010	
-	I/O LABEL	343766-0010	
-	BAG, SPEAKER ASSEMBLY	347853-0010	
-	COMMITMENT LETTER	325526-0010	
-	OWNERS GUIDE, US OWNERS GUIDE, EU OWNERS GUIDE, AP	344837-0010 344838-0010 344839-0010	

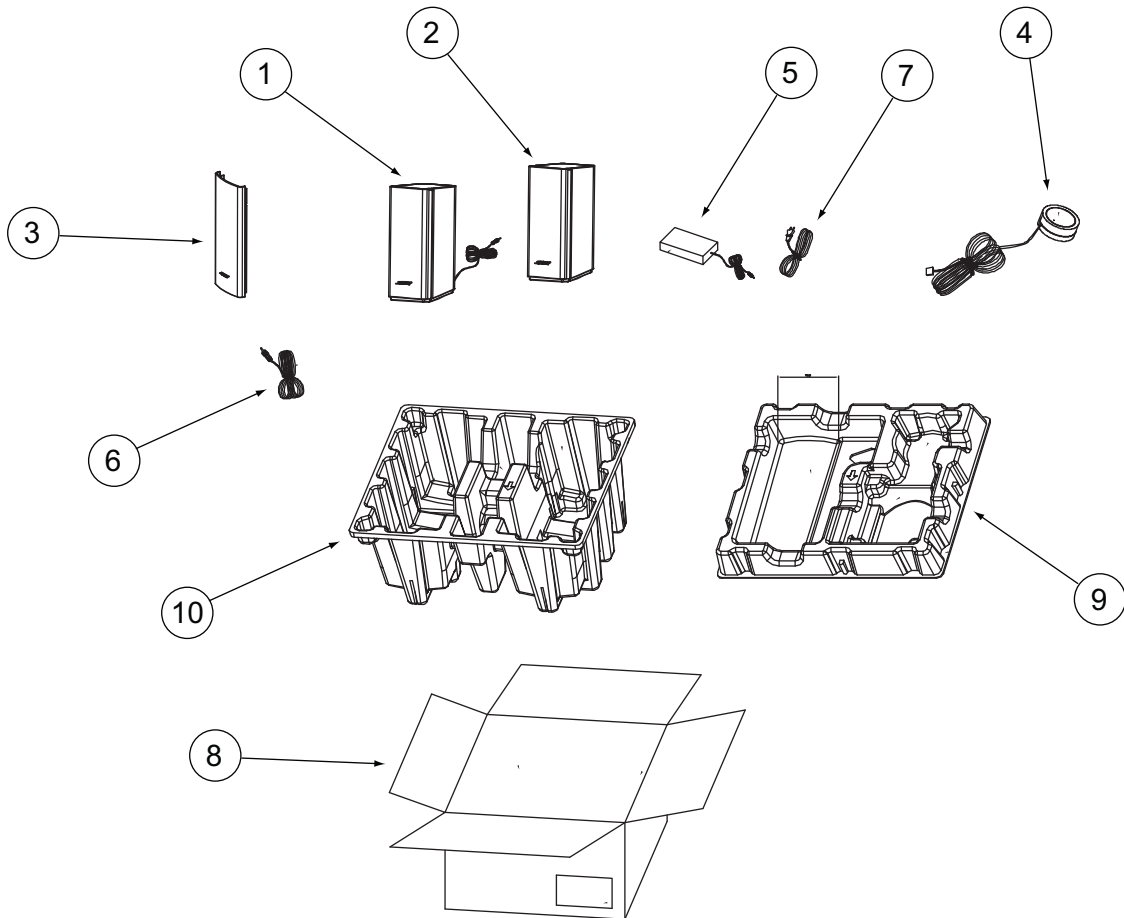


Figure 1. Packaged System

# I/O LABEL REPLACEMENT

## Companion® 20 I/O label replacement

### Equipment Required

- Hot Air Gun
- Small Flat blade screw driver or dental pick
- New I/O Label, P/N 343766-0010

### 1. I/O label removal

1.1 Using a hot air gun, heat the I/O label surface for 3 to 5 seconds.



1.2 Use a small flat head screwdriver or dental pick to lift the top right corner of the label.



1.3 Once the right top corner is lifted, continue lifting by hand to remove it fully away from the assembly.



1.4 Remove all glue left on the assembly by hand, then clean using a duster cloth.



### 2. I/O label replacement

2.1 Use Bose part number 343766-0010 as the replacement I/O label.

2.2 Place the new label on the assembly starting from the bottom.

2.3 Once the label is in place, apply an even amount of pressure for 4 to 6 seconds across all areas of the label.

# LISTENING TEST PROCEDURE

## Test Equipment required:

Audio Signal Generator

## Test Set up

Connect speaker cable from the left speaker to the right speaker.

Connect an audio signal to the audio input cable and connect the cable to the input jack on the left speaker.

Connect the power adapter to the power input on the right speaker.

**NOTE:** For all listening tests (air leak and sweep test), listening should be done at a distance of 2 feet (0.6 meters) in a quiet environment. Listening distance must be decreased to 1 foot (0.3 meters) in a noisy environment. All testing is to be performed on each individual speaker of the pair, with the volume control knob set to the maximum volume setting and both A and B inputs connected. There should be no audible distortion during any test.

## 1. Air Leak Test

1.1 Apply a 50 mVrms, 50 Hz audio signal to the input of the right speaker.

1.2 Set the volume control pod to the maximum volume setting.

1.3 Listen carefully for air leaks from the cabinet seams around the transducer and at the input terminals.

1.4 Replace system if air leaks can be heard.

## 2. Frequency Sweep test

2.1 Apply a 50 mVrms, 35 Hz audio signal to the input.

2.2 Set the volume knob to the maximum volume setting.

2.3 Listen carefully as you sweep the bass module from 35 Hz to 3 kHz, then from 3 kHz to 35 Hz.

2.4 Listen carefully for buzzes, rattles, or other extraneous noises from the speaker cabinet. A slight whooshing sound from the port (at approximately 70 Hz) is acceptable.

2.5 Replace system if buzzes or rattles can be heard from the cabinet.

# Test Procedures

## 3. Control Pod Functional Test

**3.1** With the system completely set up, turn on the system by tapping on the control pod. Confirm system is on by looking for the white LED.

**3.2** Set the volume knob on the control pod to maximum (fully clockwise).

**3.3** Touch the center of the control pod . Verify that the LED turns on and off with each touch.

**3.4** Lower the volume to minimum (fully counter clockwise) on the control pod and connect an audio source to the “Audio Input” jack.

**3.5** Adjust the volume control to a comfortable listening level and verify that the sound is muted and un-muted when the LED is off and that there is no audible pop when switching from mute to un-mute.

**3.6** Rotate the control pod ring, verify that the volume increases and decreases and that the ring moves smoothly.

**3.7** Replace any control pod that is defective.

## 4. Control Pod AUX and Headphone Test

**4.1** With the system off (no LED), connect an audio source to the AUX connector on the control pod.

**4.2** Turn on the system and set the volume to a comfortable listening level.

**4.3** Confirm audio can be heard.

**4.4** Connect a headset to the headphone input on the control pod.

**4.5** Confirm audio from the speakers are muted when the headphones are connected to the control pod.

**4.6** Confirm audio can be heard from the headphones.



# SERVICE MANUAL REVISION HISTORY

<b>Date</b>	<b>Revision Level</b>	<b>Description of Change</b>	<b>Change Driven By</b>	<b>Pages Affected</b>
7/11/11	00	Document released at revision 00	Service Manual release	All
12/02/11	01	Test procedure referred to bass module and satellites. Updated procedure with corrected information.	Errors in original manual	8
1/31/13	02	Input power rating corrected.	Error in original manual	4

SPECIFICATIONS AND FEATURES SUBJECT TO CHANGE WITHOUT NOTICE

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***Better sound through research***<sup>®</sup>

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