



## **JBL SpeakerAngle User Guide**

*JBL SpeakerAngle* is the first app for precise speaker angle optimization using your iPhone, iPad or iPod Touch. It allows you to fine-tune speaker placement and maximize the fidelity of your audio system.

The degree to which speakers are angled towards the listening position, called "toe-in," determines how much of the speaker's direct, on-axis signal you are hearing, as opposed to the speaker's off-axis signal reflected by the walls, ceiling, and floor. Subtle differences in toe-in can affect the tonal balance, imaging, and the overall sense of spaciousness you hear. While the degree of toe-in is largely a matter of personal preference, angles should be precisely set for all speakers. *JBL SpeakerAngle* is the tool you need to do this.



There are many variables which determine optimum toe-in, the most important of which are the distances between the speakers and the distance from each speaker to the listening position. Ideally, both speakers in a stereo system (or all Left and Right speakers in a surround sound system) should be equidistant from one another and from the listening position, and symmetrically angled.

To measure and set toe-in angles with *JBL SpeakerAngle*:

**1. Start by making sure all speakers in your system have zero degrees of toe-in.**

Move each speaker in your system so its front surface is facing straight ahead, as shown in the onscreen graphic; i.e., not yet angled towards the listening position, indicated by the listener icon at the center of the screen. No need for any fancy measurement: just adjust each speaker using a visual approximation.

**2. Identify the speaker you plan to adjust.**

Touch the icon corresponding to the speaker you wish to adjust. The icon will be updated with an orange border and the number box immediately below the icon (the small gray rectangle) will display the following text: "Touch to ZERO."

**3. Place your iOS device on top of the selected speaker.**

Physically place your iPhone, iPad, or iPod Touch on top of the selected speaker and align its bottom (short) edge with the front edge of the speaker.

**4. Touch the number box below the selected speaker icon.**

This tells *JBL SpeakerAngle* that the selected speaker and your iOS device are aligned, and that the speaker toe-in is 0 degrees, as shown in the onscreen graphic. The number box will become red and display the value of "0°".

*Note: When working within a Surround project, side speakers will initially display 90° (perpendicular).*

**5. Move the selected speaker.**

Without moving your iOS device, physically rotate the speaker inwards (that is, towards the listening position). As you physically move the speaker, the icon will move in the same way, and the number box below it will display the current toe-in angle. When the speaker is angled



within 20° to 45°, the number box changes color, from red to green. It then changes to light green once the speaker is angled to within 3° of the generally recommended 30° for nearfield systems.

#### **6. When you have rotated the selected speaker to the desired angle, "lock" the value.**

Touch that speaker's icon a second time to deselect it. The number box changes in color to orange, indicating that the displayed value is "locked" and will no longer be affected when your iOS device is moved.

#### **7. Set the toe-in angle of additional speakers.**

To set other speakers in your audio system to the desired angle, simply touch a different speaker icon. The icon will be updated with an orange border. Then repeat steps #2 - #6 above. When the second speaker in a Left/Right pair (i.e., the Left and Right speakers in a stereo system, or Left and Right front, rear, and/or side surround speakers in a surround sound system) is angled to precisely the same angle as the first speaker, the number box becomes yellow in color.

*Note: Due to space limitations in a particular room, left and right speaker placement may not be symmetrical. In this case, differing toe-in angles are required to provide the listener with the same amount of on-axis sound from both speakers. In this case, after setting the desired angle for one speaker in a Left/Right pair, you can visually determine a good toe-in angle for the other speaker by sitting in the listening position and adjusting that speaker until it appears to be directed toward you at an angle similar to that of the first speaker.*

*For greater precision, consider purchasing our companion app, **JBL SpeakerPro**, which adds distance measurement capabilities and provides intelligent toe-in recommendations based on the layout of your system. **JBL SpeakerAngle's** Quad menu provides an option that enables you to make this purchase; see #9 below for details.*

If your surround sound system includes side speakers, place your iOS device on top of the Side Left (SL) or Side Right (SR) speaker and touch the corresponding speaker icon, then repeat steps #2 - #6 above. When the selected side speaker is angled within 70° to 110° (that is, plus or minus 20° from perpendicular), the number box will remain green in color. When it is angled by less than 70° or more than 110°, the number box will become red in color to indicate the toe-in is outside recommended angles.

#### **8. Use the Reset button to clear the toe-in angles.**



To reset all toe-in values and delete all angle data from the current project, touch the Reset button at the bottom right of the screen.

## 9. Use the menu options.

Pressing the "Quad" menu icon the upper left-hand corner of the screen presents several additional options:

The **My Projects** button takes you to the My Projects screen, where you can recall a previously stored project (by touching its name), rename a project (by touching and holding on its name), or delete all projects.

The **User Guide** button allows you to view these instructions onscreen. The **Share** icon at the bottom allows you to email, text, copy, or print these instructions. An Air-compatible printer and WiFi connection are required for printing.

The **Purchase JBL SpeakerPro** button takes you to the App Store, where you can purchase our companion app, *JBL SpeakerPro*, which allows you to take precise distance measurements and receive intelligent speaker angling recommendations based on the layout of your system.

**More at JBL Pro...** takes you to the *JBL SpeakerAngle* webpage, which provides additional information and links to the latest products from JBL.

*Note: The **Purchase JBL SpeakerPro** and **More at JBL Pro...** operations require a WiFi and internet connection. Neither will erase current measurements. When you return to **JBL SpeakerAngle**, all data in the currently loaded project remains in memory.*

## 10. Manage your projects.

The "My Projects" screen allows you to load and/or rename the current or previously stored projects. There's no need for a "save" function, because *JBL SpeakerAngle* automatically saves all data as you are working.

To recall a previous project, touch the project name.

To rename a project, touch and hold the project name. A Rename dialog will open, allowing you to assign a name to the project using the onscreen iOS keyboard.

To create a new project, touch the "+" button at the bottom of the screen.



To delete a project, swipe to the left next to the project's name and then touch the Delete button.

To delete all projects, touch the Quad menu icon at the top left-hand corner of the screen and select Delete All Projects. *Caution: This will permanently delete all previously created Projects.*