



Home Theater Speakers Explained

Understanding Sonic Vortex® technology in the home



Sonic Vortex is a patented “twist” on a transmission line loudspeaker. Let’s learn how in-wall home theater speakers from Beale Street Audio stand out from the competition.

Home theater customers want their speakers to match the depth of their screens. That’s a serious design challenge: even shallow-depth wall mount-speakers jut into the room far past the plane of a modern flat panel. In-wall speakers seem like the obvious solution, but most fall short in two main ways:

1. Unpredictable sound quality: the variables of the wall cavity – including cavity size, depth, and contents such as duct work or pipes – impact speaker performance. The same in-wall speaker will produce different results in different locations.
2. Sound bleed into adjacent spaces: the speaker’s back wave propagates into the wall and potentially into other rooms in the house, disturbing activities and wasting acoustic energy.

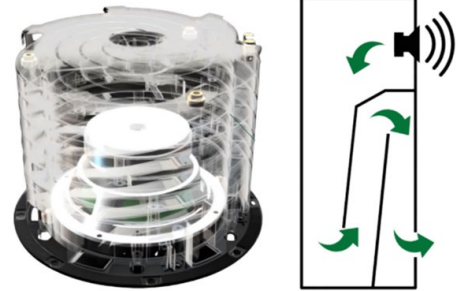
These problems are most acute in infinite baffle speakers, the most common design for in-wall and in-ceiling speakers. For years, integrators have tried to

correct these issues by building custom backboxes or stuffing the wall with insulation. These labor-intensive half-measures produce problems of their own, such as rattling or muffled bass resulting from restricted airflow. Truly resolving these issues requires a wholly new architectural speaker design.

The Benefit of Beale Street

Beale Street home theater speakers are different. They employ a patented Sonic Vortex™ design to eliminate sound bleed and ensure consistent sound production in any installation environment. Here's how it works.

Sonic Vortex is a patented “twist” on a transmission line loudspeaker. Manufacturers use transmission line designs for standing speakers to produce great bass from smaller enclosures. Sound from the woofer reverberates down a long, damped pathway before being redirected into the listening area, preventing



loss and allowing greater control of the sound energy. Beale Street Sonic Vortex technology applies the same concept to architectural speakers: The transmission line is coiled inside a compact, integrated and tuned speaker enclosure. The woofer back wave is forced through this channel at a high velocity, then directed out of multiple ports at the front of the speaker.



[IWLCR4-MB](#) Dual 4" LCR 2-Way In-Wall Speaker

The four speakers in the Beale Street home theater line leverage Sonic Vortex technology in an even more compact design. The MB and BB in-wall LCR speakers have a depth of under 4 inches, and the ultra-thin MB and BB pancake LCR speakers are less than 3 inches deep.

All Beale Street Home theater speakers include two 4" woofers, each with a Sonic Vortex enclosure, and one 1" tweeter. The woofers are positioned close to the tweeter to create a true point-source experience. This increases imaging, detail and vocal intelligibility, which are all critical to great home theater and musical performance.

Beale Street Home Theater speakers are designed for flexibility. They can be installed vertically or horizontally, around an LED TV or screen, as a stereo pair, or even as an in-wall rear channel. Because Beale Street LCR speakers can be used in any surround position – and are not affected by wall construction, cavity size, or contents – they ensure consistent sound production across the surround sound system. The ultra-thin Beale Street LCR in-wall speakers are ideal for situations where wall depth presents installation challenges, but high-level performance is still required.

Beale Street LCR speakers integrate seamlessly with the entire line of Beale Street Audio architectural speakers and subwoofers. The Beale Street family of products offers a wide variety of cabinet air volume and port dimensions, allowing infinite design options. Whatever the system performance goals, Beale Street Audio can be used to create a fully concealed audio system with uncompromised performance.

Of course, hearing is believing.
Contact a Vanco or Beale rep to
hear the difference for yourself.

Visit us at www.vanco1.com to view our
complete line-up of home theater speakers.

