

December 12, 2011

The Subwoofer

In my opinion, the greatest home audio improvement in decades is the subwoofer. It increases a system's range and power, while keeping the speaker layout simple.

The 3-Way Speaker: Tweeter, Midrange, and Woofer

Earlier hi-fi speaker systems had up to three speaker cones in a single box: the small tweeter for highest frequencies, the mid-range, and the large woofer for bass sound. The box was designed only to optimize the bass sound. The two smaller speakers need little or no enclosure. Further, the woofer draws most of the power, so it needs large gauge speaker cables.



Technics CR55

Introducing the Bookshelf Speaker and the Subwoofer

Splitting the woofer from the speaker system allows the tweeter - mid-range box to be much smaller. The separate woofer box is larger and more powerful to cover even lower frequencies: the **subwoofer**. This combination creates a richer sound.



Typical
Bookshelf Speaker

Because human hearing doesn't locate the direction of bass sound, the subwoofer can be placed anywhere in the room. It can be hidden under or behind furniture. It is best to place the subwoofer on the floor in a corner of the room. Sound will bounce off the walls and floor.

The Powered Subwoofer

Moderately priced all-in-one receivers and Blu-ray surround kits usually include a passive subwoofer, which is amplified by the receiver. Although the subwoofer is large in size, it remains limited in performance.

For the best effect, mid and high end systems use a powered subwoofer. Like this 250 Watt JAMO model, it plugs into a wall outlet. This delivers room shaking sound that is so real, it may even raise the hair on the back of your neck!

Warning: the subwoofer can be heard in adjacent rooms.



JAMO Model SUB250

The Trend

Having worked in radio and sound for much of my young adulthood, the size of a speaker was most important. I was truly impressed by 7-ft tall boxes in discotheques with three 24-inch

speaker cones. I could feel the sound inside my chest. The subwoofer was first exposed to the public for the movie 'Earthquake'. Dozens of these large speakers were installed around the movie hall to effectively mimic the feeling of tremors. Today, anyone who visits an I-Max theater will see the audio setup behind the screen in their live introduction.

The subwoofer is now an integral part of any modern audio system. It produces full sound; providing the true "concert hall" experience in your own home.

Marc Larin is owner and manager of Cardinal Home Technologies, LLC in Cary, NC.

www.cardinalcabling.com