

The placement of loudspeakers is very important. In one recent Audio Engineering Society study the placement of loudspeakers in a listening room has as much influence on listener preference as the speakers themselves. The room influences sound in two main ways: it changes the low frequency performance and it modifies the spatial aspects of playback.

The low frequency performance is the easiest to deal with. Software packages are available to let you come to a quick set of positions to try with the proviso that the room must be reasonably normal in proportions and in terms of the distribution of absorbing surfaces.

As a general principle don't put your speakers in the corners of the room and don't put them near a wall, especially a side wall. Remember too that where you sit has as much influence on the bass as where the speaker is.

One setup we like and one which we use in our listening room is to put the speakers way out into the room and sit with your back to the wall, exactly equidistant from the two speakers. The speakers sitting in the middle of the room do not excite very many modes in a differential fashion and placing your head (almost) against the wall lets you sample all the low frequency modes at once. We said "almost" there because you don't want to actually have the back of your head on the wall since it can wreck the imaging and create an overblown sounding bass.

The imaging produced by your speakers depends upon how many reflections follow on the heels of the direct sound from the speaker. If you could get a situation where there were no echoes at all you would get the best imaging that hi fi systems are currently capable of. Unfortunately, if you were to upholster your walls with absorbent material, like wool, the complete lack of reverberation would produce a dry, dead sound so some reverberation is desirable to create a sense of envelopment. The trick is to make sure that the reverberation comes after a decent interval following the direct sound.

Your first reflection to control is the sidewall reflection, and hanging a moderately heavy curtain on both the sidewall will neatly control this first reflection. (Tip: to get this point on the wall, have one friend hold a mirror on the wall while another friend holds a flashlight at the tweeter of the speaker. Sit in the listening position and get the friend with the mirror to move back and forth until you can see the reflection of the flashlight in the mirror. Mark the spot on the wall).

The second reflection is the floor reflection. Although this arrives at roughly the same time as sidewall reflection you don't notice it so much. This is not usually a problem unless you have bare wooden, tile or marble floors. You will have to strategically position reasonably heavy rugs on the floor in such a case.

There is not much you can do about the ceiling reflection without sacrificing some aesthetic sensibility.

If necessary, the fix is the same as that for floor reflection but with a lot more consideration given to aesthetic.