



## Tip #10 7.1 Dipole Placement

### Surround Speaker Placement

The main thing to keep in mind when placing surround speakers in a home theater is that one or two pairs of surround speakers in the living room is somehow supposed to replicate the sound that is delivered by 12-24 surround speakers in a commercial theater. That's a big task.

The best way to do that is to fool your ears into thinking that 2 or 4 speakers are really 24. Fortunately, we know the secret:

The secret is to aim the surround speakers AWAY from the listeners' ears. That way, the sound reflects off the walls, ceilings, and floor, all over the room, before reaching the listeners' ears. All these multiple reflections fool the ear into thinking that there are really a lot of surround speakers in the room. That's good, because when you have lots of surround speakers, you can generate a very convincing, lifelike ambient soundfield. Your ears will really believe that they're hearing the mechanical echoes inside a submarine, or leaves rustling all around them in a jungle, or hearing the hustle and bustle of a busy city street.

So, the short advice: Place 'em high on the walls, pointed straight out, not down at the listeners.

### Now for the Graduate Course

A real common question is how to place your surrounds on the rear wall in a 7.1 setup. While the general guidelines given in the preceding section are fine, we feel that if you're here reading Atlantic Technology's Tech Tips, then that automatically qualifies you as someone who appreciates a more sophisticated way to do things.

Let's start by reviewing how you place dipole surrounds in a 5.1 system: Dipoles alongside the

listening area, in-phase facing front, out-of-phase facing rear. Sounds great. Very 3-dimensional and realistic. See Figure 1.

### Dipoles in a 7.1 system

If you are using dipoles for the rear speakers (which we think is a great idea) as well as for the side speakers, pay attention now!

Remember when you installed your side surround dipole speakers? They have an in-phase side and an out-of-phase side. You oriented them so that the in-phase of each speaker faced towards the front of the room.

So here's what you need to do when mounting dipoles on the rear wall to go along with dipoles mounted on the side wall: Switch the Left and Right surround speakers and mount them "backwards" on the rear wall. In other words, the Right speaker will be on the left side of the room and the Left speaker will be on the right side of the room.

Why? Here's why: By swapping the rear surround speakers, the rear-firing out-of-phase of the side surround will blend right into the out-firing out-of-phase of the rear surround. Then the two inward-firing sides of the rear surrounds will both be in-phase. Then the out-firing side of the other rear surround is out-of-phase, and it will blend seamlessly into the rear-firing out-of-phase side of the other side surround speaker. Everything sounds nice and smooth, very realistic and convincing, with no abrupt, unnatural changes in the soundfield. See Figure 2.

This is pretty subtle stuff, but it's these kinds of little things that make the difference between good-sounding and great-sounding systems.

Figure 1: 5.1 Dipole Placement

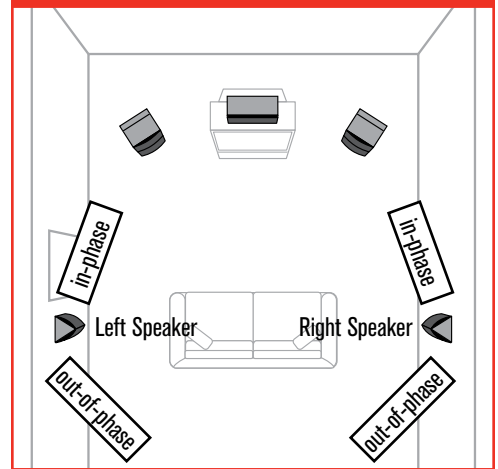
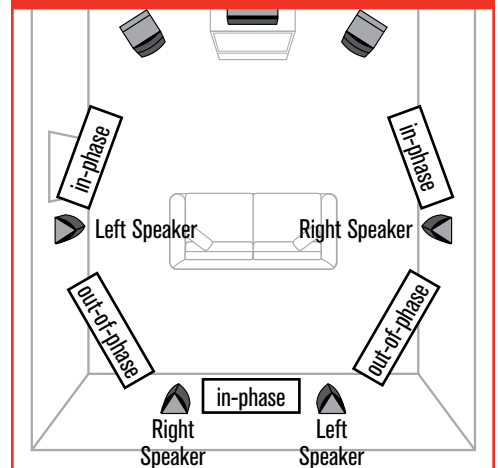


Figure 2: 7.1 Dipole Placement



### Other Tech Tips:

Tip 6: Why a corner sub?

Tip 7: Why the ICTS-6 LCR?

Tip 8: Why the IWGB?

Tip 9: Why sealed subwoofers?