

Tech tips #01

from the ADAM Audio bench

At a glance the A77X from ADAM looks to be an X-ART tweeter surrounded by two of the woofers like you might find in an A7X speaker. But the truth be told, this monitor system is in fact a cleverly designed extended range full three way system. The 2 woofers are not fed the same frequency information. While both of the woofers go all the way down to 38Hz as true woofers should, one operates as a bass speaker going from 38Hz to 400Hz, while the other crosses over on the top of its range at 3kHz. (38Hz to 3kHz). So the total monitor system is in fact a woofer, mid-range, and X-ART tweeter.

This leads to the age old horizontally placed speaker question of „should my tweeters be on the outside, or the inside“.

Now this is really a combination of art and science. So whichever way you place your speaker is up to the way you prefer to work. The popular answer to this question seems to change like the wind. Every season there is a different answer. But we had to have a philosophy to build this speaker to, and the common wisdom (and technology) states tweeters in and woofers out. And the reasoning is as follows.

Old school philosophy says tweeters out (NS10 style). Speakers toed in slightly to the listener. The concept being low frequencies being omnidirectional should come from the center. (they will sound like they are coming from everywhere anyway because they are omnidirectional). Mid and highs being more directional should be spread out to give the listener a wider stereo image.

All good so far?

New school states Woofers out and Tweeters and mid-frequencies in (yes, the opposite of old school). The concept (simply stated) being this - and there are more complex answers having to do with phase coherency, time alignment, and other big words, but I did say „simply stated“ - if the woofers are at the outside of the image, the sound comes from everywhere anyway so their placement would probably be OK on the outside of the image. But the mid speaker and the tweeters, here is where there is a difference. Placing them on the inside of the image (ideally in an equilateral triangle) will create a more solid center image. Also create a better image location for a moving (panned) sound. Yes, we tested it. Therefore, out with the old school and in with the new. So you get a more solid image of your sound in between the speakers where the sound is and the speakers are not.

So why you ask should you know this and is it worth writing about in a tech tip. Ahhh, the answer is in the speakers, if you own them. Notice one is marked speaker „A“ and one is marked speaker „B“. So „A“ goes left with the woofer on the outside of your stereo image and speaker „B“ goes right with its woofer on the outside of your stereo image. Now a mix with the kick drum and bass guitar dead center (where the speakers aren't) should sound like you can close your eyes and reach out and touch them in that center space, where there's no speaker.

Until we mix again ...

The Tech Bench.

