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Subject: Midbass slam

Posted by [jonone](#) on Tue, 19 Jul 2016 11:36:24 GMT

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I went to a house party the other day which was outside and they had hired some pa speakers, they weren't huge probably 12" 2 ways and a pair of 15-18" subs.

The bass was really powerful, that classic hit you in the chest bass just like only live /pa sound seems to be able to create.

Now it got me thinking how my hifi and most other hifi doesn't have this, so why?

My musings are: they obviously use bigger drivers in the midband and there usually high sensitivity, so capable of high spl, which is also an important part of the puzzle, it needs to be loud!

Most hifis in the uk use roughly 6" mid/midbass drivers that are often quite insensitive with low powered amps, so not capable of high spl.

They also sometimes use sub woofers to help the bottem end but there normally crossed over @80hz or below and this is not really where that midbass kick is, so it's still left to the small drivers in the mains to cover the midbass area.

It's interesting to note most hifi and especially AV or obsessed with 20hz and below with huge monster subs were as most pa only goes down to 30hz.

Another part of the puzzle is the room, most pa is used outside or at least used in a space big enough that modes caused by reflected sound is not a problem, but most hifi used in normal rooms will suffer from the reflections caused by the walls and the floor, especially as most have there mid/woofer at ear level, which quite often puts a big notch right where the kick drum energy is.

So the obvious answer is flanking subs to help with the reflections caused by woofer height and position and the mains having large sensitive 10-15" woofers.

The down sides to this are large woofers need large cabs, not very good for waf or small rooms, also they need wide baffles.

my speakers are small active 6" 2 way, the company that makes them feels this is the best compromise, they feel small speakers image better partly because of a small baffle, the theory being the size of the human head is optimal, they also have an exceptable amount of bass and any smaller is an compromise in this area, any bigger and you get crossover problems due to breakup and resonances which again makes the midband an imaging suffer.

They also stick to 2 ways and subs as they feel you get a similar performance as a 3 way without the extra crossover which causes extra distortion and normally ends up right where male voices end, plus subs are more flexible due to adjustable volume and positioning.

They also use active for less distortion and the ability to use steep filters so any nastys in the drivers are well out of audible range.

They are rated at 108db according to the manufacture.

The cons of a 6" 2 way playing full range is intermod distortion but this is arguably not audible and according to the manufacturer to counter act this you would have to cross over at something like 100hz or above resulting in less bass sources for the multi sub technique. Also the flanking subs are feed the same signal as the mains so if you high pass them the flanking subs receive the same high passed signal resulting in fewer deep bass sources.

The pros are better for waf/smaller rooms and arguably a better mid range. Subs are easier to hide, my two 15" flanking subs in down firing cubes will arguably look at lot smaller and less "hifi" then 15" speakers with 17+" front baffles but I suppose this depends on taste and room size.

So my setup will be, 6" active 2 ways as mains playing full range with two 15" stereo flanking subs which are low distortion, they will be crossed over high enough to play in the the midbass area and with 18mm Xmax they are useful as deep bass sources too. I will also have a single near field sub fed from the lfe output of my AV receiver.

I'm hoping with the smoother response from multiple bass sources and two 15s playing in the midbass I can get some of that slam!

I would love to hear your opinions especially big vs small speakers.

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