

# What Is A Subwoofer?

It seems that today's subwoofers are more of an engineering exercise than anything else. Engineers, just gotta love 'em. Subwoofers were originally passive, like most speakers were. Most speakers are still passive. And like most speakers this means that they had to operate and function within the laws of acoustics. Not a bad thing. Actually, a completely natural sounding thing.....when done properly. Sadly, that was just not always the case.

There were way too many misaligned designs out there which attracted engineers to come to the rescue. Or maybe they were just looking for something else to over-engineer. All I know is that as soon as someone slapped an amplifier onto a subwoofer box everything changed. Now we have overly manipulated, digitized, equalized, processed, pasteurized, homogenized and sterilized sounding devices that are DSP'd up the vent tube and make lots of bass. OK, enough raging.

We are offering an Acoustically Optimized Alternative to this madness. If all you are interested in is how much bass can come out of a box then they have you covered. If you are, instead, interested in listening for detail and natural sounding low frequency reproduction then I hope you'll give us a try. I'm not so bold as to say that we are the best. There really is no such thing.

However, we are actually reaching down into the low 20Hz range without selling our souls to the devil or incorporating any type of Band Aid like boost. We are doing this acoustically with a little gift from Mother Nature. And Mother Nature is not known for handing out gifts when it comes to acoustics.

Some of these other devices are incorporating 12dB(!!!!) of low frequency boost to achieve the numbers that they use for advertising. Yes, that's 4 exclamation marks. Every 3dB of boost requires a doubling of amplifier power. 12dB means a factor of 4. So now let's do some fun math:

Say you're starting out with a 250 watt amplifier. Increasing the output by 3dB would now require 500 watts. Another 3dB would mean 1000 watts. Another 3 dB is 2000 watts. And finally the last 3dB for a total of 12dB would require 4000 watts of power. Today, amplifier power is easy to come by, so let's just say you incorporate a 4000 watt power amplifier in the first place. Not that there's anything wrong with that!

Let me tell you a little story:

*Way back in 1970 I was in electronics class. This was 8<sup>th</sup> grade middle school. Mr. McKenna was the teacher. Towards the end of the school year he decided to have the other teachers bring in any non-working electronics and he would have us, his brightest and most educated students, attempt to repair this stuff. I was given the insides of a console audio system.*

*For those too young to know what that is, it's a large piece of furniture with a complete audio system lurking inside. I had just the chassis, no labels, no markings. First thing I did was go to the parts cabinet and retrieve a nice 8" paper speaker. Setting it on the table facing up I connected it to the only 2 wires hanging off the back of the chassis. Plugged in the power cord and turned on the power switch.*

*What sounded like a shotgun blast, or, for those of you familiar with the alarmingly fun fireworks of the time, an M-80 blast, certainly got the attention of everyone in the classroom. After the speaker cone and voice coil assembly had hit the ceiling, it slowly fell like a parachute, in flames, until it settled onto the floor. Mr. McKenna was there to stomp out the smoldering debris and then just walked away, shaking his head. Turns out those wires were for a 120 volt turntable motor. Don't think I was ever the same after that.*

The moral of the story is that this was 60Hz at 120 volts. That is the equivalent of 3600 watts at 4Ω. Now, I admit, that poor, doomed 8" speaker was nothing like today's robust subwoofer drivers. But even today's drivers would be hard pressed to absorb that kind of abuse. So these systems have to incorporate all kinds of limiting and compression for the sake of self preservation. None of this contributes to a natural sounding presentation.

And not to beat a dead horse (who the hell came up with that one?) but I prefer the natural sound of an acoustically optimized subwoofer. And wouldn't you know it, that just so happens to be what we are offering.

So that's my story and I'm sticking to it. In fact, I feel much better now.

HAPPY LISTENING

John