Subject: Low BL drivers exhibiting higher power compression
Posted by Mike.e on Wed, 06 Oct 2004 11:15:15 GMT
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-howcome?Mathematical reason for it?Cheers!Mike.e

Subject: Re: Low BL drivers exhibiting higher power compression
Posted by Bill Fitzmaurice on Wed, 06 Oct 2004 11:40:05 GMT
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It's a matter of the acoustical impedance of the horn. If it is high enough and you try push the driver to long enough excursion there will come a point where the motor strength is insufficient to overcome the impedance offered by the air column mass and the cone motion versus input voltage is no longer linear. Can't help on the math- flunked it.

Subject: Thanks Bill
Posted by Mike.e on Wed, 06 Oct 2004 15:10:40 GMT
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Perhaps AES or something has infos!Thanks for the email tooCheers!Mike.e

Subject: Re: Thanks Bill
Posted by Bill Fitzmaurice on Wed, 06 Oct 2004 16:04:48 GMT
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I don't know; there's been some stuff in the Journal recently on high Bl drivers but nothing in relation to horns. This hasn't been that big an issue for horns until fairly recently, as even in the theatrical realm their haven't been many horn loaded subs, and above 80 Hz the problem seldom occurs, due to the lowered excursion requirements. I more or less stumbled on it when I started experimenting with high impedance subs, and only then with high power(over 100 watts)inputs at 60 Hz and lower.

Subject: Re: Low BL drivers exhibiting higher power compression
Posted by Wayne Parham on Thu, 07 Oct 2004 11:00:17 GMT

Hi Mike,On first thought, I think that is probably generally true. Low BL generally means low efficiency, higher drive current for a given SPL, sooner onset of compression and more reduction from it.Low BL means the motor is weak. The fixed magnet or the voice coil or both aren't strong. It could be that the magnet gauss is low or gap geometry keeps flux density down. High excursion drivers with very long coils have lower flux density in the gap, because it is spread out over more space. Or it might be that the voice coil isn't capable of transforming current into magnetism, perhaps because of conductor resistance, limited heat transfer or physical layout. In any case, it would seem to me that a weak motor needs more drive, which will probably force it into compression sooner. And some conditions (high resistance, poor thermal conduction, etc.) that cause it to lack force contribute to high thermal compression too.I guess if we looked at lots of examples, we might find some exceptions but it appears to me that your observation is probably generally true. A speaker with low BL generally is a low efficiency speaker. It needs more drive current and is more prone to suffer from compression.Wayne

Subject: thanks wayne
Posted by Mike.e on Thu, 07 Oct 2004 11:21:12 GMT

Makes sense!Theres always a compromise between 2(or more) things you want!btw ive noticed that the beyma PRO LX range look good on horn!