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Subject: Re: Impedance rise in horns

Posted by [Wayne Parham](#) on Sun, 13 Jan 2008 20:58:03 GMT

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An electrical impedance rise can be because of acoustical or mechanical impedance in addition to purely electrical causes. In the bass range, the cause is almost always mechanical or acoustical. In a sealed box sub, there is a single impedance peak caused by the mass/spring resonance of the driver mass and the suspension spring plus the air load from the box. In a vented box, there are two electrical peaks. In a transmission line or horn, there are several impedance peaks. They are the result of several things, but mostly standing waves that setup along the line.

It is pretty easy to tune the system for a single note. What's hard is to make it uniformly highly efficient across a wider band. If you just need a single note to be efficient, you can tune a horn/pipe for that frequency and tune the rear chamber to peak at that same frequency. That way the system will be mechanically and acoustically resonant at the frequency you want to be loudest.

David McBean's Hornresp program will probably be very useful for you. You can download it at the link below.

Hornresp

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