Subject: Re: a good question
Posted by Martin on Fri, 05 Aug 2005 10:26:54 GMT
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Ed,I think we are talking about two different approaches. Let me add some more to the discussion.Lets say one is starting from scratchand the new full range drivers just arrived on the doorstep, the question is what to build.Path 1 might be a back loaded horn. So the back loaded horn is built and the hope is that the bass will be outstanding and no subwoofer is required. The full range driver is all that is used and the entire audio spectrum is covered. Great intent but this is not what I see often when reading the audio forums. The builder puts together the back loaded horn and then starts looking for a sub because the very bottom end is disappointing. I have seen this many times.Path 2 would be to design a system including a sub right from the start. The full range driver is only required to play from say 200 Hz up. No bass from the full range driver. Why build a back loaded horn? If you build a OB then a crossover is needed for the sub and for the full range driver on the open baffle. The full range driver will need a Zobel and a crossover which places passive circuit elements in the signal path. If you build a sealed box for the full range driver, you have an acoustic 12 dB/octave crossover that can be tuned by the box volume. A ported box produces a 24 dB/octave roll-off. The closed box does have an advantage of controlling dirver deflection so Xmax is less of a concern. Then all you need is some form of crossover for the sub. Either of these approaches is an easier build compared to a back loaded horn. The full range driver never sees bass frequencies so destroying the driver is probably not as big of a concern. If a full range driver in a sealed box is paired with a high efficiency woofer to produce a system that is 95 to 100 dB efficient, for 1w/1m, from 30 - 40 Hz up I believe it would play plenty loud and not risk distortion or driver damage. A 15 or 18 inch woofer will move a lot of air. Room placement is no longer a requirement to get bass. This system might be very compact.So I am not trying to compare a full range driver in a back loaded horn to one in a sealed box. I am comparing a back loaded horn and sub system to a full range driver in a sealed box and sub system and wondering why the simple build would not be as effective as the complex build. What extra does the back loaded horn add to this type of system?Martin