Subject: Re: Designing a TL
Posted by Wayne Parham on Thu, 02 Jun 2005 15:37:03 GMT
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I am familiar with the models and agree with your points. However, my point still stands as well, and that is that Helmholtz resonance and standing wave resonance are not mutually exclusive. All vented boxes have both properties in play; There is no other way.I also wanted to make a point, a clarification of a definition really. If a cabinet uses Helmholtz resonance as the primary feature and is designed in such a way to eliminate or suppress standing wave modes, then it is a bass-reflex enclosure. If it is designed to use the primary quarter-wave mode as its main feature, then it is a quarter-wave pipe. This is less determined by appearance and more determined by the actual mechanism at play. The only way to really know is by modeling or measurement.There is evidence that shows each type of speaker can be optimized to perform well. I've seen good examples of both types. Transmission line enclosures must size the port and cabinet so that Helmholtz resonance is out of band. It must also suppress quarter-wave harmonics. Bass-reflex cabinets must be sized to move standing waves out of band, or they must be suppressed using the same techniques as transmissions lines employ, i.e. port/driver placement and stuffing. In my opinion, there are more similarities than differences.