Subject: Re: 2Pi Towers
Posted by Wayne Parham on Sun, 23 Jan 2005 05:51:26 GMT
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As with most things in acoustics, labels are useful but there's sometimes more than a simple tag line. For example, horns usually act like quarter-wave resonators near their lowest frequency extremes. The line between pipes and horns becomes blurred in the bass. Similarly, quarter-wave pipes aren't immune to acting as Helmholtz resonators if the conditions are right. Bass-reflex speakers may use Helmholtz resonance, but that doesn't prevent standing waves from forming. The laws of physics don't prevent standing waves from existing in a cabinet simply because it is a horn or a bass-reflex speaker, nor do they prevent Helmholtz resonation in a ported quarter-wave pipe. So my point is that sometimes there are more than one of these

Helmholtz resonance tuned to 40Hz. But they are not immune to standing waves along their long axis. Quarter-wave resonance is controlled by stuffing and by the placement of the port and speaker. I would imagine that other similar looking speakers designed to be used as quarter-wave pipes control Helmholtz resonance by using port dimensions that shift the Helmholtz frequency out of the passband or using it to advantage as a secondary acoustic device. But the

cabinet.