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Subject: Re: 2Pi Towers

Posted by [Wayne Parham](#) on Sun, 23 Jan 2005 00:18:27 GMT

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Transmission lines use standing waves as their primary tuning method. They usually have a pipe that is  $1/4$  wavelength of the desired tuning frequency and open at one end. If the pipe isn't opened at the end, then acts differently than pipes that are open at the end. But the designer can take advantage of that as an alternate tuning method, or use a different acoustic device. Bass-reflex speakers use Helmholtz resonance. However, it is important to realize that both standing waves and Helmholtz resonance are possible at the same time. Standing waves develop inside any chamber, depending on its dimensions and whether it is open on one or both ends or somewhere in between. Helmholtz resonance also sets up in any chamber that has an opening. So the two features aren't mutually exclusive.

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