Subject: Comment on Waveguide: reply on AA High Efficiency?
Posted by Bill Epstein on Fri, 28 Jan 2011 13:10:47 GMT
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"Just a point of clarification. Any horn is a "wave guide". Cupping your hands together and yelling through them would be considered a wave guide. A CD or Constant Directivity horn has better dispersion than a Tractrix for example. BUT....a CD will have a natural roll off above 6K or so, so you need to compensate for that roll off. If you look on any of the pro active crossovers you will see a "CD" button. That adds a bump above 6K or so" - DJN

Subject: Re: Comment on Waveguide: reply on AA High Efficiency?
Posted by Wayne Parham on Fri, 28 Jan 2011 14:09:14 GMT
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The term "waveguide" has really been taken to mean horns designed with directional control being more important than acoustic loading. Another distinction is that they don't use diffraction in the throat. See the first several pages of the document below, describing the history of CD horns and waveguides, especially around page 10.
High-Fidelity Uniform-Directivity LoudspeakersThe two criteria, constant directivity and lack of diffraction, rule out certain shapes. Exponential, tractrix and spherical horns create patterns that narrow as frequency goes up. Early CD horns provide good pattern control, but have several features that create discontinuities. The horns that can be called waveguides are generally conical (radiused at the throat if driven by a compression driver) or radial (if asymmetric, also radiused at the mouth if driven by a compression driver). An elliptical (oval mouthed) horn is similar to a radial horn, but is not a simple extrusion to make a "pie slice" with straight side walls. It maintains the flare contour at oblique angles.