Subject: Re: Horn Mouth Diffraction
Posted by Wayne Parham on Fri, 07 Oct 2005 04:45:26 GMT
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I don't have those papers, but I do have a copy of Geddes 2002 book "Audio Transducers." Chapter 6 is about waveguides and on page 152, he wrote a section called "Treatment of Mouth Diffraction." There are references to the rippling of polar response that occurs when the mouth terminates abruptly, and a wider flare is suggested as a solution.The primary mode of wave propagation in conical tubes is spherical and along the central axis of the tube. An infinite horn has no termination, and so no mouth diffraction. An extended horn with a large mouth tends to approach this as far as I can tell.Maybe what you are talking about are high order modes. Geddes has made that a special focus, and he uses a aborbant foam in his horns to reduce them. While the principle mode of radiation is along the central axis, high order modes also exist that traverse from side to side. He explains that his solution attenuates the high order modes more than the primary mode because they have to bounce through more absorbent material.That's what I have understood from talking with Earl, but beyond that, I should probably allow him to elaborate. Perhaps he'll chime in and discuss it further.