Subject: Re: Hornresp models, 0.5pi vs 1pi?
Posted by Wayne Parham on Wed, 29 Nov 2006 05:34:04 GMT
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particular reference value, so don't take its SPL as a 1W/1M or 2.83v/1M figure. The measurement was done in a relatively small room with reflections gated out. The horn and microphone were placed on the ground and pulled away from all walls. The microphone distance and power level used was arbitrary; I was really just looking for response curve shape, not

generate similar response curve shape, with the only real difference being on-axis SPL. When the radiating angle is increased to half-space or more, response becomes more peaky that I would want, so I wouldn't recommend using this horn as a single midhorn outdoors. Indoors, in a small to medium size room, consider it as eighth-space when used in corners, even though it is several feet above the ground. In a very large room, consider it as quarter-space.The radiation angle modeled in Hornresp is really only a perfectly accurate description of speakers used

boundaries would have to be open for the model to truly describe the radiating angle. There would have to be no ceiling or opposing walls, not enclosed in a room.The intended application of

So in a purely eighth-space environment (outdoors with speaker sitting in a trihedral corner facing outwards), the midhorn is high enough off the ground for it to be radiating into quarter-space through its passband. The horn's LF cutoff combines with a null from ground reflection to rolloff the lower midrange, setting its crosover point acoustically.However, indoors, you have a sort of fractional space that isn't exactly any of the "pie slice" spherical angles described above. Depending on the wavelengths and the size of the room, it can actually act as a smaller radiating angle than eighth-space. This of course also brings room modes into play, but most of the midhorn's passband is above the modal range. At the lowest frequencies, room modes are an issue, but complex summing between the midhorn and bass bin actually mitigates room modes and smoothes response as a result. That's one of the benefits of having such a large midhorn,

intended, I'd consider a small to medium sized room to act like eighth-space even though the horn is several feet off the ground. Only in a very large room or outdoors does it act like it is radiating into quarter-space.