Subject: Super-tweeters
Posted by Wayne Parham on Tue, 02 Oct 2007 17:03:13 GMT
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I find that output up to 16kHz gives plenty of sparkle. Cymbols and chimes sound right, and it doesn't sound muffled, like there is a lack of treble. Most modern 1" compression horns with titanium diaphragms will reach 16kHz.On the other hand, I can hear a little extra "air" in that region between 16kHz and 20kHz from a tweeter that goes up that high. You can tell the difference between a tweeter with response up beyond 20kHz and a compression horn that goes only up to 16kHz. It's subtle, and you don't miss much. The compression horn gives you all the sparkle and doesn't sound like it's missing anything but a whisper of "hiss" or "air".Compression horns do a few things very well, better than any other kind of tweeter. They're designed to reach 120dB/M and more. They don't need a lot of power to reach these levels either, they're just cruising and distortion is very low. Another thing is their controlled directivity. Horns put the sound where you want it, and they can be used to uniformly cover the listening area. A good horn tweeter will put the splash of the cymbols throughout the room, not just striaght out on-axis. Their controlled directivity, low-distortion and wide dynamic range are the strengths of compression horn tweeters, and that's why I tend to prefer them over other tweeters.One way to extend the top end is to add a super-tweeter, but I'm not thrilled with this approach. The problem is there's no

problem. Super-tweeters crossed over above 5kHz sound "phasey" to me so I don't use them. One of the strengths of the cornerhorn is its uniformity of response throughout the listening room. When a super-tweeter is added, this is lost. That's the reason I use a 1" compression horn tweeter as the highest frequency device.Another way to extend the top octave is to use a compression driver with a beryllium diaphragm. There are a few compression horn tweeters with beryllium diaphragms that can reach 20kHz. That's an excellent way to get that last few kilohertz of audible sound. It's a great option, but expensive.