

townshend audio

Maximum Super Tweeter

as reviewed by Dave Clark



Super (adjective). Synonyms: glorious, great, incomparable, keen, marvelous, outstanding, peerless, sensational, smashing, superb, top-notch, wonderful. Okay, that pretty sums up what I have to say about the Townshend Audio Super Tweeters. And I thought that that book of synonyms and antonyms my aunt gave me for my birthday would never get any use!

DAVE CLARK'S SYSTEM:

LOUDSPEAKERS
Reimer Speaker Systems Tetons
(with the Hi-Vi Isodynamic Planar
tweeters and series crossovers)
heavily treated with Marigo VTS
Dots, with Townshend Audio
super-tweeters.

ELECTRONICS
Clayton Audio M100 monoblock
amplifiers. Sutherland PhD phono
stage. Blue Circle BC3000
preamplifier w/Tungsram tubes
and BCG3.1 power supply.

SOURCES

Yeah, but I know what you are thinking, "Cool, a super tweeter, but you're not going to get off that easy!" "Besides, what do we really have here?" "Another add-on to add-on to the add-ons?" Not really, as this may be one of the few real add-ons that really add-on to the music, without adding-on anything that should not be added-on.

Add-on super tweeters have been around for a long time, and are now having a resurgence in popularity, perhaps due to the new formats that push the frequency envelope. Ribbon tweeters from Decca and semispherical piezoelectric tweeters from MuRata have garnered much acclaim among the audiophile faithful. What we have here is the latest from Max Townshend of Townshend Audio, add-on ribbon tweeters that will extend the frequency of your speakers to a point that can drive the neighbor's dog batty. Looking like electric razors from an era long past, the Townshend Audio Maximum Super Tweeters have a claimed ruler-flat frequency response of 20kHz to

Cary 306/200 CD player or Sony 777ES SACD/CD player.
Transrotor 25/25/60 Leonardo turntable with a Shelter 901 MC cartridge. Sony RCD-W1 and Magnum Dynalab MD-90 tuner. Sennheiser HD540 headphones and Meier Audio headphone amplifier.

CABLES

Audio Magic Clairvoyant 4D, JPS Superconductor+, Soundstring, and Silver Sonic Revelation interconnects, and Audio Magic Clairvoyant 4D or JPS NC speaker cables. Elrod EPS2 Signature (preamp and digital) and JPS Aluminata (amps) and Kaptovator AC cables (Eclipse uses two).

ACCESSORIES

Audio Magic Eclipse Power Purifier, Blue Circle BC86 Noise Hound (amplifier circuit) and Audio Prism QuietLines (throughout the house). Dedicated 20 (amps) and 15 (everything else) AC circuits. Tons of Shakti Stones and On-Lines and Original Cable Jackets (frig's AC and on DSL phone line). Various Marigo VTS Dots used extensively throughout the system and room (window behind listening seat). Echo Buster acoustical treatments and Shakti Hallographs. BDR cones and board, Blue Circle Cones, DH Jumbo cones, Vibrapods, Mondo racks and stands, and Townshend Audio 2D (speakers) and 3D Seismic Sinks (CD player and preamp). Walker Audio Ultimate High Definition Links. Various hard woods placed here and there along with numerous Peter Belt treatments.

70kHz (-3dB at 12kHz and -6dB at 90kHz). The sensitivity is adjustable via a stepped attenuator, to suit speakers ranging from 80 to 110dB in sensitivity. Their impedance is a nominal 6 ohms at 20kHz and increases to 30 ohms at 100kHz, though they look like a rather benign 8 ohms to the amplifier. They can handle up to 350 watts, so unless you are planning on killing your self and your system, they should be fine with any sensible amplifier. And they are quite heavy despite being so small—meaning their magnet is *rather* beefy.

Alright, what do the Townshend Super Tweeters really do? I mean, we are all pretty deaf above 16kHz, and most people spin regular CDs, where there ain't nuttin' much above 20kHz anyhow (actually 22.5Khz, if you want to be exact), so what's the deal? (Of course, DSD, DVD-A, and LPs do not see this rolloff—make that a *brick wall* or dead end at 20kHz—so playing any of these formats with the Townshend tweeters in the chain should result in a more significant audible improvement than that heard from regular CDs. This is true, at least to my ears and senses, although greater benefits can be heard further down range. More on that later.)

To paraphrase from the Townshend site:

The all new Townshend Audio Maximum Ribbon Super Tweeter is designed to extend the response of conventional Hi-Fi speakers to 100kHz. Just as the subwoofer fills in the bottom end, the Maximum Super Tweeter fills in the top end. It makes the music much more real! All instruments—even double basses—take on an extra clarity that is neither bright nor brash. In fact the sound is both clearer and smoother. The really surprising thing is that when the tweeters are played alone, one can barely, if at all, hear a thing. Remarkably, however, all listeners—even, for example, those having no sine wave sensitivity above 10kHz—experience the same enhancement when the Super Tweeters are engaged, describing the sound of their hi-fi systems as 'more natural' and comfortable to listen to.

Max goes on to say:

Embodying super-powerful neodymium magnets and an ultra thin eight micron pure aluminum ribbon, the Super Tweeter offers outstanding performance in an easy to drive compact package. All copper conductors, including the matching transformer windings and the aluminum ribbon, are deep cryogenically treated (DCT) for unrivalled fidelity. Pressure relief vents in the sides of the case are provided to allow the air pressure on the ribbon to equalize in the event of sudden pressure changes.

Okay, now we know what they are, and what Max Townshend says they do, but let's take this a bit further. Tannoy, in a white paper on their super tweeters, suggests that they may be doing several things (at least with their own speakers, so lets assume this applies to other speakers—see [Tannoy](#) for more). Super tweeters extend the frequency range of a loudspeaker by several octaves above that of human hearing —16-20kHz (audible by children at least!). This makes sense, they are super tweeters—they'd better have an output up to the stratosphere (and the Townshend tweeters do). This, based on the fact that many instruments produce considerable energy above 20kHz (some extend up to 40kHz), results in increased tonal accuracy of instruments and improved transient response. That is, with super tweeters, things sound more *right*.

Another site (<http://www.cco.caltech.edu/~boyk/spectra/spectra.htm>) digs even more deeply into the matter of how much musical energy various instruments possess above the threshold of what a normal person can hear. According to this site, there is quite a bit of musical information well beyond what one we assume is the limit of our hearing. Of course, this begs the argument that if we cannot hear that high, who cares? I have read theories related to things like hairs inside the skull being stimulated (or something like that) by frequencies far beyond what we can hear. This allows us to respond in other ways to these frequencies (that is, we *do* react to them), and I would say that until this is explored by a trained professional—as opposed to an untrained professional, who should not be exploring the hairs inside our skulls or anywhere else—we can leave this argument for now.

Okay, but if a regular CD cuts things off rather abruptly at 20kHz, why should super tweeters make a difference with that format? And if all that stuff beyond the audible range is not being heard or reacted to (assuming that the previous is circumspect—I'm not saying it is or isn't), why do the super tweeters do what they do lower down the frequency range, with *any* format? Paraphrasing again from the Tannoy site, a super tweeter, if it can be time aligned to the other drivers (mid and treble), "... will reduce the high frequency phase error by moving the low pass roll off point much higher, typical - 6dB @ 54kHz, -18dB @ 100kHz. So even if we ignore for now the perception of sound above 20kHz, the addition of a super tweeter will better preserve the harmonic relationship between instruments."

Tannoy concludes by stating that, "Even with the conventional CD sources, the addition of a super tweeter reduces phase error and improves transient performance (of a speaker) significantly below 20kHz." This makes sense if they are affecting the output of the other drivers as suggested above by the STs' own output below 20kHz. And since they do have considerable output within the audible frequencies (down to below 12kHz), it would appear that their presence helps to clean up the interaction of the mid and treble drivers, or, as a teacher might suggest, the Super Tweeters get the other drivers to play together just that much better. Ahhh, harmony.

All this means that their effect should carry over to any medium being played—CD, SACD, LP, 8-track, etc. If they affect the interaction or behavior of the main speakers, then you get the whole deal all the time—not just with extended bandwidth formats. Cool. I should point out that I did the majority of my listening to either LPs or regular CDs.



Max Townshend offers that his STs are so far superior to conventional dome tweeters in terms of speed, transient response, energy storage (in this case, the lack thereof), distortion, linearity—in other words, all the things tweeters should do—that they tend to “block out” the faults of the dome tweeters, allowing the listener to focus in on the *good* versus hearing the *bad*. That is, we end up listening to the super tweeters and not the other tweeters in our speakers. Max feels that they *may* be addressing phase error as well, but sees more going on than just that. The STs are simply better at doing what needs to be done than conventional tweeters that everything *locks into place*. (He suggests that there are very few conventional tweeters that work properly.) Additionally, when used with hi-rez formats and LPs, their extended bandwidth clearly reveals those formats' obvious strengths over Redbook CDs—making them the hands-on winners.

Is this a bunch of wild ideas? Maybe. Who knows? Until some real testing is done, Tannoy and Townshend may be onto something, or we are all just loony. At any rate, the Townshend Super Tweeters really, really make a difference in my system. I am hearing pretty much what Townshend is claiming, and my speakers have ribbon tweeters, with few of the problems associated with domes.

Back to the beginning. The Townshend Audio Maximum Super Tweeters have a

glorious, great, incomparable, keen, marvelous, outstanding, peerless, sensational, smashing, superb, top-notch, wonderful effect on the music. They do extend the highs, though with CDs it is a moot point, and yes, LPs and SACDs (the few that I own—SACDs that is. LPs? Too many to count) have more of a sense of extended treble. This results in a larger soundstage, deeper and bigger, with a greater sense of *air*—that is, the volume of perceived space or soundfield—as well as the perception of *instrumental air* and dimensionality (you know, that sense of 3D-ness or palpability). The cool thing is that much of this is heard on CDs as well, not just the hi-rez formats. Redbook has never sounded better! But LPs sound WAY better.

The really, really cool thing is that the Townshend STs have a *very* positive impact in another area—the bottom end. The highs are a given (these are super tweeters, after all!), but who would assume that adding the Super Tweeters to the *all-the-way-down-to-20Hz* Reimer Tetons would clean up the bass, which now comes across as even more defined and tactile. I am hearing *more and better* bass than ever before—cleaner, faster, with less boom but more slam, and the lower fundamentals have a greater sense of integration with the rest of the music. The *overall bass-ness* is now just stellar! Since I love my bass, this is a plus, and I think that this is where the STs are affecting my speakers to the greatest extent—by cleaning things up so that the rumble can really rattle! The bass now seems to go lower, though I know it really isn't. Very visceral! You want improved pitch definition and greater weight? You got it! Just don't ask me why, as this is hard to fathom—these are *tweeters*! How can the Super Tweeters affect the bottom end in such a positive way?! I know that adding a subwoofer can do this, but why tweeters?

Perhaps it is related to what they are doing further north. That is, their extended bandwidth does lock things into place, as Max suggests, allowing us to hear *more and better*—more of the good and less of the bad. Or is it that they are addressing phase error and driver integration, as suggested by Tannoy? Inquisitive people want to know!

Along with the bass being more *in tune* and fun, the Super Tweeters have another interesting and oh-so-positive effect on the music. That is, what they do to the bottom end is carried over to the music's mid and treble frequencies. As I said above, perhaps Max Townshend and Tannoy are onto something here, and at the upper frequencies, at least it makes a bit more sense. After all, the output of the mids and tweeters falls closer to that of the STs, so it makes sense that this is where the STs would have the greatest impact. One hears less of a sense of a bunch of drivers fighting to be heard, and more of a sense of harmony. It's like the old proverb—the whole is greater than the sum of the parts. Everything just comes together, is more harmonically *right* and tonally *correct*. Voices and instruments take on more of that spooky "right there" quality, along with a more natural sense of timing and pace. The music *happens*, as opposed to just *happening*.

Music unfolds with that much less effort. Cohesiveness is the order of the day, as if a more seamless, *tonal* group of musicians were playing. This is not to suggest that the soundstage becomes a sonic morass, with fused images blurring into each other. The audible realization is just the opposite. We are talking about *harmony* here, but with *individuality* kept intact. Images stand separately, with a greater sense of their own space and presence—there's that *air* thing again. Detail and resolution are also improved, to a level that is quite beguiling, as are *neutrality* and *accuracy*, those qualities that have so much meaning to so many audiophiles. I hear more of what I feel to be real and right and less of the stuff that gets in the way of the music. Less crap, more music. Again, is Tannoy on the mark with the idea of phase error and driver integration? Or is it Max's idea of removing the *bad* to better hear the *good*? Who cares, these things work!

You'd think that by adding super tweeters to your speakers, you would hear an increase in treble, with things sounding brighter, harder, or *treblier*. Shouldn't adding tweeters add considerable treble energy to the music? Not at all. As I said, things just come together, with more music and less crap. There *is* more air, as I have mentioned, but not so much that it floats away into the stratosphere. Things are not brighter, just better.

I know, this sounds like a rave, and you are thinking, "Yeah right. You heard all that?!" The funny thing is, you will too, but it takes time to sort out the trees from the forest. The Super Tweeters had a positive impact from the moment I installed them, but my initial response was more like, "Gee, the music sounds so *right*" and "Man, this is really interesting, it all comes together in a way that I never imagined before." While the system sounded great before the Super Tweeters were installed, it was clearly superior after. Extended listening revealed the actual benefits—it takes a bit more time to study the forest to delineate the trees, but since the view is so beautiful, who will mind?

Downsides? They're \$1500 a pair—not cheap, though much of this is an issue of the currency exchange than the cost of the tweeters. Even so, what they do to the music is worth the cost of admission. Upsides? They're easy to use—any audio dummy with flat-topped speakers (or a good imagination, if your speaker slopes or is too narrow for the STs to sit on) can get these up and running in a few minutes. Sit them in the center (you can try moving them left or right, forward or backward—results will vary, and only you can decide where they work the best with your setup), set the level to, say, 3 and go from there. Turning the knob up or down matches the sensitivity of the STs to that of the speakers (meaning they are simply playing louder or softer—you are not changing their extension or a crossover).

Mine are just right at the 3 setting. Above this, the effect is a bit too heavy-handed, calling WAY too much attention to what they are doing. Below 3, the effect is too subtle to justify their use. I like the banana sockets supplied, as my Audio Magic Clairvoyants use bananas as well, so it is an easy connection. The supplied umbilical cable is based on Townshend's own line of cables, and I doubt changing this will make much of a difference, so leave well enough alone. Max's stuff is pretty cutting edge, and it is no doubt quite superior or at least equal to whatever you may come up with. I did paint my Super Tweeters a nice semi-flat black, as the matte finish I requested (as opposed to chrome) showed fingerprints faster than I wanted to deal with. They need no break-in, and sound good from the get-go, so the fun starts when you hit the couch.

I am not so sure you have really heard your speakers—or music!—until you try these. I thought I had my system clicking on all cylinders, but the addition of the Townshend Super Tweeters really opened my eyes to what I was missing, as well as *hearing*. How do these stack up against the competition? I haven't a clue, but from what I have heard, none are as easy to use. I bought my pair. Highly recommended. **Dave Clark**

Maximum Super Tweeters

Retail: \$1500 pair

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