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## EQUIPMENT REPORT



## Bryston Mini T Loudspeaker

Whole New Ballgame!

Ron Doering

**D**on't look now but the USA's quiet neighbor up north is a major hotspot for high-end audio. Companies like Classé, Mirage, Energy, Paradigm, Totem, PSB, and Oracle are almost household words in some households. Add to this list Aurum Acoustics, Blue Circle Audio, Ed Meitner's EMM Labs, Raysonic Audio, Reference 3A, and I think you too will find that there is some pretty creative design work being done in the Great White North.

Hailing from Peterborough, Ontario, Bryston of course is well known, and greatly respected, for its amplifiers and, more recently, digital gear. Favored by the pro-audio market, its stuff has never been cheap but neither has its build-quality ever really been less than first-class. Now Bryston is getting into the loudspeaker business in a country that is already home to at least 14 well-regarded speaker

manufacturers. Mulling over this new venture I was surprised that Bryston had taken amplification out of the equation; you *can* hook the Mini T's up to one of Bryston's own SST<sup>2</sup> amplifiers, a combination that will no doubt work very well, but you don't have to. Given Bryston's expertise it could have cooked up the ultimate self-powered loudspeaker, and wouldn't we all want one of those?

Well, maybe, maybe not. Bryston wants to move loudspeakers, and the self-powered variety is going to be a tough sell for those who have already invested in a good amp. James Tanner of Bryston's brain trust and the main instigator of its speaker business also reminded me that the self-powered loudspeaker, at least when amplification is applied internally as is the norm, invites the use of compact Class D circuits, which, if not quite anathema, is a topology he considers second-rate. So what is Bryston bringing to the party?

According to Tanner, the main areas of opportunity were loudspeakers that do not suffer from dynamic compression, have big "listening windows," and excellent in-room power response. To address compression Tanner found the best solution to be multiple high-quality drivers in a vertical array. Ultimately expressed in Bryston's flagship Model T, which aims seven drivers at the listener, the vertical array helps explain the size of the gigantic (for a bookshelf speaker) \$2695 Mini T; it also explain why a small, two-way design, like a Totem Model 1, is not going to come from Bryston.

I'm used to frequency response data that show a single curve; however, the Mini T's published frequency response graph contains two similarly shaped curves. One (labeled LW) is level, and the other (labeled SP) heads steadily south starting at 100Hz or so. LW or "listening window" is superbly flat and comprises an average of response curves measured from the typical on-axis listening positions. The SP or "sound power" response curve is also superbly flat but falls 8–10dB as it approaches 10kHz. It is the average of all the response curves taken in a 360° angle around the loudspeaker, otherwise known as the polar response. The combination of this direct (on-axis) and reflected sound is what we ultimately hear, and according to Tanner, achieving linearity in both curves is crucial to optimum performance. He was certainly not surprised when I informed him that the Mini T's produced the flattest frequency response (32Hz–10kHz  $\pm$ 2.7dB) I have yet observed in my listening room.

In electronics Bryston is certainly no start-up, but it pretty much is in the loudspeaker biz, which makes the Mini T's measured performance all the more impressive. However, I'll let you in on a little non-secret: Bryston hasn't entered into this venture alone. Technical and manufacturing assistance, as well as the use of a state-of-the-art anechoic chamber, were provided by Axiom Audio, a company I wasn't familiar with but which is evidently a major player in the home-theater market, building loudspeakers (including drivers) as well as amplifiers. Knowing that Axiom is in possession of an expensive anechoic facility strongly suggests that it takes speaker design seriously. Also learning that Axiom's Ian Colquhoun, an alum of the psychoacoustic research facility that is Canada's National Research Council, and Andrew Welker, formerly of API/Mirage, both lent a hand or two in the design of the Mini T makes expectations of strong performance more reasonable. So the Mini T's are "flat" and, in that sense, "accurate," but do they sound good?

## Use and Listening

My heart goes out to the sales person, copywriter, or ad campaign that is charged with getting across what these speakers are about.

I'm now staring at two pumped-up bookshelf speakers sitting on made-to-fit but otherwise unremarkable tubular stands (sand- or shot-fillable), clad in an equally unremarkable, although well executed, black ash-pattern vinyl (hardwood veneers are available at an additional cost). Constructed of, again, unremarkable although carefully braced and assembled MDF, the cabinets house what look to be rather pedestrian drivers—dust cap, cone, rubber surround. Even the mounting of said components is rather ordinary—no coaxials, seemingly no attempt at time-coherent signal launch a la Thiel and others, and no special patterns or materials on the front baffles to help control diffraction. My speakers in college looked more advanced. Not much here for an ad in a glossy magazine. Time to call the model agency.

The shame of it is what can't be gotten across in the crass ad-fueled world we live in, or in the necessarily brief audition the Mini T's will probably get in a showroom, is the hours of testing, data generation, data digesting, tweaking, more testing, etc. that were necessary to achieve the results I've seen, measured, and heard. And I'm not talking about this being done in the designer's living room. Unfortunately components that have that sparkling personality which immediately catch your ear, whether that be particularly healthy bass or a dramatic treble (which may falsely suggest clarity), may win out over comparatively *duller* accuracy under such conditions.

I know that "monitor" may have a strong, not necessarily positive, connotation with some folks but really this is what the Mini T's are, and in the best possible sense. In this regard the Mini T is simply the latest expression of the NRC's philosophy that accuracy is accuracy, whether in the home or the studio, and anything else leads, in their words, to "a circle of confusion." If this sounds to you like a middle finger raised to all those artist-designers whose ears we should trust, then who am I to argue? Here I am listening to a product designed by a bunch of lab rats and I'm loving it!

## SPECS & PRICING

<b>Driver complement:</b> One 8" ceramic-coated aluminum cone woofer, one 5.25" ceramic-coated aluminum cone midrange, one 1" titanium dome tweeter	<b>10-250W</b>
<b>Crossover frequencies:</b> 160Hz and 2.3kHz	<b>Sensitivity:</b> 85dB (1 watt, 1 meter anechoic)
<b>Loading:</b> Bass-reflex	<b>Impedance:</b> 4 ohms nominal
<b>Frequency response:</b> 37Hz-22kHz (+/-3dB)	<b>Dimensions:</b> 10.5" x 22.5" x 9.8"
<b>Maximum SPL:</b> 118dB	<b>Weight:</b> 42 lbs. each
<b>Min/Max recommended power:</b>	<b>Price:</b> \$3195/pair in real wood veneer; \$2695/pair in vinyl; \$499/pair for custom stands although Bryston suggests any quality stand 18-24 inches in height

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As expected given the careful attention paid to off-axis power performance, listening position is not critical, although obviously you want to be centered somewhere in between the Mini T's for stereo. Indeed, these are one of the few speakers I've experienced which do the trick of realistically putting a singer, guitarist, bassist, what have you, in the next room. Doing my laundry I could swear on a stack of TAS back issues that Ella Fitzgerald was right there next door in the listening room. Well of course "she" was, as that is where my stereo is, but my point is that it sounded as if a real person were singing in the other room. Try this and you'll see what I mean (or not).

Neither is seating position that critical when listening in stereo. Put away the listening chair and bring out the listening couch! While sitting dead-center at the apex of an equilateral triangle to the speakers returned the best listening results, a couple of feet side to side and even up or down did not ruin the solidity of the sonic image. This is not to suggest sloppiness or inaccuracy, but rather that the solid image had some "give," seeming to bend to where my head needed to move, at least within a radius of three feet or so. On Oliver Nelson's "Stolen Moments" from his *The Blues and the Abstract Truth* there was hardly a bad seat in the house, and the best seat was treated to a brass and rhythm section in punchy, uncompressed sound.

If Bryston insists on calling these "bookshelf" speakers then I feel it is my duty to inform you of their abilities in tackling music's nether regions, for "bookshelf" traditionally means you should not expect much bass. Well feel free to have expectations in this case. The earth-shaking organ "C" pedal was indeed earth-shaking, whether in the "Saturn" movement of Holst's *The Planets* or in "Sunrise" from Richard Strauss' *Also Sprach Zarathustra*. These speakers put out real, pitch-accurate bass at least down to where pitch ceases to matter; according to my measurements 32Hz was down only 4dB from 1kHz, and the curve was quite smooth between these points.

Downsides? Well there are better looking loudspeakers out there, at least in my opinion, although the Mini T's would probably be quite fetching in one of the real wood veneers you can opt for. And given their size and height when mounted on custom stands, the Mini T's don't exactly blend in easily with the typical furnished room, but neither are they grotesque. Last but not least, you will need to have a fair amount of power on tap to get them to sing. Think of 100 watts/8 ohms as a minimum.

## Conclusion (Flat is Good)

Perhaps because of their basic simplicity and design malleability, loudspeakers, more than any other audio component, can and do attract the artisan designer-manufacturer. Here, especially, just a little bit of technical knowledge and a whole lot of perseverance and creativity can go a long way. And if said artisan can in turn find enough people who agree that the sound he is able to coax from his contraption is "musical" and are willing to pay the asking price, well this could even be a successful business proposition. Perhaps this is why the word "accurate" is not that popular in loudspeaker sales literature. On the other hand, Bryston's Mini T's have gone a long way toward answering the question posed by Floyd Toole and the NRC some time ago. If perfectly flat frequency response is now expected from electronics, why should the greater than  $\pm 3$ dB in-room response curves commonly found in loudspeakers (regardless of price) be acceptable? **tas**