"... a benchmark in sound ... I'M STILL DAZZLED ... SPEECHLESS."

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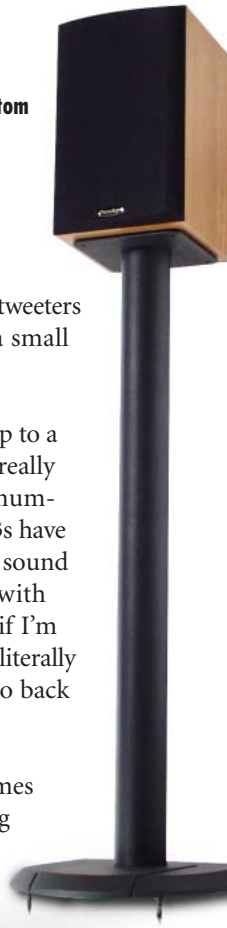

Atom

by Corey Greenberg

To my ears, the biggest sonic difference these days between really good, expensive loudspeakers and budget-priced boxes has to do with their tweeters. Today's best budget boxes, like NHT's SuperOne and JBL's HLS-610, can deliver an astonishingly neutral, musical mid-range. But when it comes to high-frequency reproduction, they still can't quite match the silkiness and detail of the best price-no-object speakers.

Whether a 1-inch aluminum dome, a fabric dome, or even the bottom-feeding 3/4-inch polycarbonate driver you see on pretty much every cheap speaker these days, it's mainly a loudspeaker's tweeter—and its tendency either to sing like the angels or hiss like a broken teakettle—that sets the tone for everything down the sonic laundry list. All things being equal, of course. (I've seen way too many high-dollar speakers using exotic, boutique tweeters that still sounded like crap, just as I've seen a few exceptionally talented speaker designers—like JBL's Joe Rogers and Energy's John Tchilingurian—coax genuinely musical treble from tweeters that probably cost less than a small bag of Gummi Maggots.)

Ahh, but it's when you move up to a good metal dome that you're really living in Fat City. The aluminum-dome tweeters on my NHT 3.3s have completely spoiled me for the sound of lesser tweeters. I can deal with cheap tweeters for a few days if I'm reviewing a new speaker, but I literally heave a sigh of relief when I go back to the 3.3s.

Though the earliest metal domes tended toward a hard, piercing sound, today's metal domes offer the smoothest, fastest, most accurately detailed high-frequency reproduction of any tweeter technology I've heard—and I've heard them all. Electrostatic? Nice and pleasant-sounding but hardly the last word in accuracy or detail. Planar-magnetic? Outside of a few designs by Eminent Technology's Bruce Thigpen, I

can honestly say that I've never heard a planar-magnetic speaker that was worth a damn or that I'd want to use in a system for auditioning other hi-fi gear.

> *"… the kind of open, extended, clean high end shared by the world's most highly regarded speakers. … I never thought I'd hear anything like it, and I'm still dazzled by the weeks I spent living with it."*

The thing with budget speakers is, a really talented designer can take a cheap woofer and that widely used 3/4-inch polydome tweeter and whip up something surprisingly good. Or even shockingly good, as in the case of JBL's HLS-610. But even at its best, a cheap tweeter just doesn't come close to the kind of open, airy, holographic presentation of a good metal dome. And to me, that kind of treble quality is a must if you really want to be transported by a set of loudspeakers.

The good news over the last few years has been the metal dome trickle-down. I think it was Paradigm that first broke the $500/pair barrier with its Mini Monitor (which I reviewed in the June 1997 issue). There'd been a few speakers before the Minis with shrieky, brittle-sounding metal-esque tweets, but the Paradigms were the first sub-$500 speakers I know of that sported a truly excellent metal-dome tweeter. I thought their treble purity and detail just completely wiped anything near their price; slap a pair of good metal domes on well-designed sub-$500 loudspeakers, and suddenly you're playing with the big boys.

CC-170

Now Paradigm is aiming to bring the sound quality of metal domes to an even lower price range. How low? Try under $200/pair! That's the price of the new Atom, the latest version of Paradigm's venerable two-way 5-1/2-incher that's enjoyed a solid reputation as one of the best cheap'n'cheerfuls on the market. The new speaker retains the original's ported 5-1/2-inch polypropylene woofer but replaces the old version's soft-dome tweeter with the company's new CMC™ (ceramic/metal composite) 3/4-inch dome. In fact, with the exception of the Micro at the bottom of the line, Paradigm has used this new CMC™ dome tweeter in its entire revised Performance series, which includes the Atom, Titan, and Phantom (which sounds more like a bunch of guys in colorful tights who can do things like fly real fast or shrink down real little).

So I'm thinking, what the hell is going on here?! A lousy two hundred clams for a pair of speakers with high-quality metal-dome tweeters? Brother, I never thought I'd see the day. Seems like it was just a few years ago when all I heard from the high-end speaker boys was how much they were paying driver huts for metal-dome tweeters. "These handmade inverted dome Focals cost me a *hundred bucks apiece*, and that's in lots of a *thousand!*" some neck-hair would pant as he stood just a little too close to me at CES. Well, here we are today, and that same two hundred bucks buys you a complete pair of Paradigm Atoms, metal domes included, and you've got enough left over for a nice dinner. (I'm talking *nice*, not *Scarface*).

Aside from the upgraded tweeter, the new Atom remains largely the same speaker as the original. This is definitely a mini speaker, at 10-1/2 inches high, 6-1/2 inches wide, and 8-1/2 inches deep (the woofer port is on the rear of the cabinet). The aforementioned CMC™ tweeter crosses over at 3 kHz to another Paradigm-made driver, a 5-1/2-inch polypropylene woofer with a die-cast basket—an unheard-of luxury in speakers this cheap. A die-cast frame means fewer vibrational problems as the woofer pounds out the low notes; it also acts as a heat sink for the magnet assembly, endowing the driver with greater power handling than if it had a cheaper, stamped-metal basket (like pretty much every other speaker in this price range).

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Hewing to a trend in the best speaker designs, the Atom's drivers are so well integrated with each other and the cabinet itself that they require the simplest of crossover circuits to hold hands: one film capacitor, one iron-core inductor, and one ceramic power resistor. Less crossover means a cleaner signal path between your amp and the individual drivers. The nice, easy impedance will get the best sound out of anything from a separate rig to a current-starved A/V receiver.

The Atom does not look or feel like an inexpensive speaker. Fit and finish are on a par with speakers 10 times the price, and it comes in good-looking light cherry, rosenut, black ash, and white finishes. At just 6-1/2 pounds, though, you'll want to pay special attention to how you mount the Atom to whatever surface it sits on. A speaker this light (and this good, which makes you want to turn the volume up) will vibrate and tend to move on a smooth, flat surface unless you anchor it somehow with that sticky Blu-Tack gummy stuff or the wax blobs Californians use to keep plates and dishes securely on shelves when the Big One hits. I Blu-Tack'd the Atoms to a pair of heavy 24-inch Merrill speaker stands, big sand-filled steel galloots that cost as much as the speakers themselves! But I really don't think you need to go all out here. I also tried the Atoms on a pair of inexpensive though rigid and non-wobbly (i.e., non-IKEA or Crate & Barrel and the like) wooden stands, and they sounded fine. But you do want to sit these speakers

on a good set of stands if they're not going on a bookshelf or in an entertainment center, because these Atoms are true audiophile mini-monitors that reward every ounce of care in setup and associated electronics with better sound.

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So how does Paradigm deliver all this for under $200? By choosing the right corners to cut and making sure none of them affects the sound. The Atom's back panel has quality gold-plated binding posts, but the panel itself is a thick composite plastic (the rest of the cabinet is thick MDF, or "beaverboard"). And the grille, while still the usual wood-frame-and-acoustically-transparent-fabric-job, doesn't come off—a good thing, probably, for homes with Baby Mozart-watching, tweeter-poking sweet-peas afoot. Or even for the rest of us who somehow just can't walk by a new speaker without removing the grille and the other hand extending its index finger–as if guided by some prehistoric DNA twitch we can't begin to understand–to push on the tweeter dome like it's a red dot on mama's beak and we're hungry baby birds.

I auditioned the Atom in my usual reference system, both flying solo and augmented by Paradigm's PDR-8 powered subwoofer and CC-170 center-channel speaker, which is basically an elongated Atom tipped over on its side but with two 5-1/2-inch subwoofers and the CMC™ tweeter. The CC-170 is also magnetically shielded for use atop a direct-view TV (the Atom can be ordered in a shielded version). The speakers were driven by a Krell KAV-500 five-channel 100-watt amplifier, connected with Kimber 8TC speaker cable. Theta Digital's Casablanca digital A/V preamp handled signal switching and surround processing; I linked it to a Theta Data III LD/CD transport and a Toshiba SD-3107 DVD player with Canare 75-ohm digital cables. All electronics were plugged into API Power Pack AC line filters.

PDR-8

". . . the Atom is so good for so little money that . . . I don't mind telling you that I'm more than just a little bit scared. In terms of treble transparency and detail, the new Atom pole-vaults over anything you're going to hear under $300/pair."

When I auditioned NHT's SuperZero mini-speakers more than a half decade ago, I felt they drew a line in the sand that marked where the true high-end sound quality began. To be sure, some interesting and musical speakers have since been introduced that have fed my hope for a future where you don't have to spend thousands of dollars for great sound, but no speaker has unseated the venerable SuperZero as the best-sounding speaker for the money.

Until the new Paradigm Atom, that is. Because at a price that's 50 bucks cheaper than the NHT's, you can buy a speaker pair that is significantly better across the board than the NHT SuperZeros. I can't believe how great these Atoms sound for [this low price!] It's ridiculous! Sound this good can't come this cheap. I almost feel like it *shouldn't*. I know I've been crying to the world's speaker design community to cut the crap and deliver the goods at an affordable price, but the Atom is so good for so little money that it gives rise in my breast to a disturbing thought: Now that true high-end sound is available for this price, what the hell am I going to carp about now? The price of sable at Barney Greengrass? Yellow-dog Dixiecrats? The decline of Gary Oldman? I don't mind telling you that I'm more than just a little bit scared.

In terms of treble transparency and detail, the new Atom pole-vaults over anything you're going to hear under $300/pair. The new ceramic/metal composite tweeter takes the usual tizzy, ringy cheap tweeter presentation and replaces it with the kind of open, extended, clean high end shared by the world's most highly regarded speakers. The Atom is a benchmark in sound for this price range. I never thought I'd hear anything like it, and I'm still dazzled by the weeks I spent living with it.

Of course, no speaker in the world with a 5-1/2-inch woofer is going to rock a large, open loft space like mine. But held to a reasonable level in my loft, a level that would be quite loud in a more normal-sized room, the Atoms are fully capable of packing a big, clean punch. Tonally, this speaker sounds brighter than the typical cheap'n'cheerfuls whose treble is purposefully rolled off to keep things from getting too ratty. What you get with the Atom is treble balance that's very close to an expensive speaker's, like the $4,500/pair NHT 3.3s or Paradigm Active/20s. The Atom's drivers don't need the usual seesaw response tailoring to mimic a pleasing balance because they're good enough to be driven flat. The tonal balance is far more neutral than I ever expected to hear from a speaker in this price range.

The Atom's midrange has very little coloration and, as you'd expect from a speaker with a very good (and very small-diameter) woofer, extremely detailed. Voices are particularly lifelike when heard through these speakers. The low end, while not rafter-rattling, is fullish enough to be acceptable. Unlike the bass-free SuperZero, which must be used with a subwoofer for it not to sound like a pipsqueak, the Atom has a smoothly rolled off low end that extends down far enough to satisfy without a sub. I did find, however, that adding Paradigm's PDR-8 powered subwoofer (8-inch driver/90-watt amp) greatly improved things, making for truly full-range sound from a trio of boxes that together could fit in a decent-sized

laundry bag. The sub is essential for home theater and serious music playback, but if you do hook up with a pair of Atoms alone, you'll be surprised at how full they sound on their own.

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The Atoms sounded so good that I had to haul out all my $200/pair faves to compare them with. "All of my $200/pair speaker faves" means exactly two: NHT's SuperZero and PSB's Alpha Mini. Everything else I've heard at this price sucks so bad in one or more areas that I can't honestly recommend it, but these two designs have impressed me as being the best for the buck. First up was the Alpha Mini. When I wrote about this speaker in last year's June issue, I said it was especially good value for the money and a great improvement over PSB's original Alpha. Though nothing about the Mini's sound really jumps up on my chest and licks my nose, it's a well-balanced speaker that does nothing seriously wrong and most things quite well. But in direct, level-matched comparisons with the Paradigm Atom, it was no contest. The Atom had more tightly focused imaging, clearer midrange, and tighter, better-defined bass. And its high end, to put it charitably, was in a whole different class altogether. The PBS is a good choice for your audio-picky kid's college dorm; the Paradigm is a good choice for you, now that you've got a kid in college. It's the one budget-priced model that can give you those goosebump highs you can't live without.

It was a much closer race with the SuperZero, but again, I have to give the nod to the Atom. The 5-year-old NHT design still goes toe-to-toe in the midrange with most speakers selling for twice the price, but its soft-dome tweeter is no match for the Atom's metal dome. To hear the difference in overall musical

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presentation between these two excellent speakers, listen to them playing David Bowie's *The Man Who Sold the World* (Rykodisc RCD-10132). Besides being one of the all-time great '70s rock records, this CD has lots of crisp, close-miked cymbal tracks mixed right up front in the soundstage, in classic '70s style. With the SuperZeros, the cymbals were hot and aggressive; a slight tizz and hotness caught my attention every time I wicked the volume up (which is every 10 seconds or so with this disc). I don't hear that same treble tizz on my $4,500/pair NHT 3.3s, because they've got much higher-quality metal-dome tweeters. On the 3.3s, the Bowie disc's cymbals sound real—lots of high-frequency sheen and a smooth, natural decay. Amazingly, that's how they sounded on the Atoms, too. The cymbals rang out with unfettered air and detail, but there was no trace of tizz or ringing. For a tweeter this great to be available to the masses at such a bargain-basement price—and on a speaker that does everything else extremely well—well, it just leaves me speechless. That's how excited I am about the Atom. I love Paradigm's more expensive models, like the Active/20, but there's more than a few excellent expensive speakers out there. At [the Atom's price], there's only one. I give these little Canadian miracles my highest recommendation.