

GoldenEar Technology Triton One Loudspeakers

Written by Doug Schneider, Created: 15 April 2015



I vividly recall how impressed I was when, in 1987, I first saw a pair of Mirage M1 loudspeakers -- and how bowled over I was when I heard them. It's as if it happened yesterday. The M1's tall, wide, shallow, all-black cabinet made it look like the Monolith from 2001: A Space Odyssey, and its front- and rear-mounted drivers -- a technology then dubbed bipolar -- produced an enormous soundfield quite unlike anything I'd heard. While its price of \$6000 USD per pair was not cheap in 1987, it was still reasonable enough that a serious audiophile with a half-decent job could afford it (though that year, I bought a car instead). The M1 was an awesome but still attainable audiophile masterpiece -- a classic of 1980s loudspeaker design. I guess it's odd to open a review of GoldenEar Technology's current flagship model, the Triton One (€ 5900,- /pair), by praising a 28-year-old loudspeaker from another company. Or maybe not . . .



GoldenEar Technology Triton Ones

Description

The Triton One, like all other GoldenEar models as well as the Mirage M1, has an MDF cabinet surrounded by a sock of stretchable fabric that extends the height of the main enclosure. Like the M1, the One's top and bottom are finished off with shiny end pieces: on the top, a curved cap of shiny black plastic held in place with pins, not unlike a typical speaker grille; and, bolted to the bottom of the speaker, an MDF plinth finished in a shiny black lacquer that complements the cap. (I'm not sure why GoldenEar doesn't offer color options for these end pieces, because it could jazz things up; looking at the Ones in front of me, Ferrari Red comes immediately to mind.)

I suspect that GoldenEar's choice of a sock grille for this and their other models has mostly to do with aesthetics and cost -- which, I understand, was also the way it was with the M1. It's an attractive, lower-cost alternative to, say, high-end wood veneer or top-quality paint, which, based on what I know of manufacturing, would add at least \$2000 to the price of a pair of speakers this size. To my eyes, the cloth also looks much better than the cheap-looking, "black ash" vinyl veneers seen on so many lower-priced speakers. Another way GoldenEar keeps its prices reasonable is by having its products made in China, though the design work is done in Canada and the US. The Canadian team has at its disposal an anechoic chamber that's a replica of the one at Canada's National Research Council, the world-class facility in which we do our own speaker measurements.

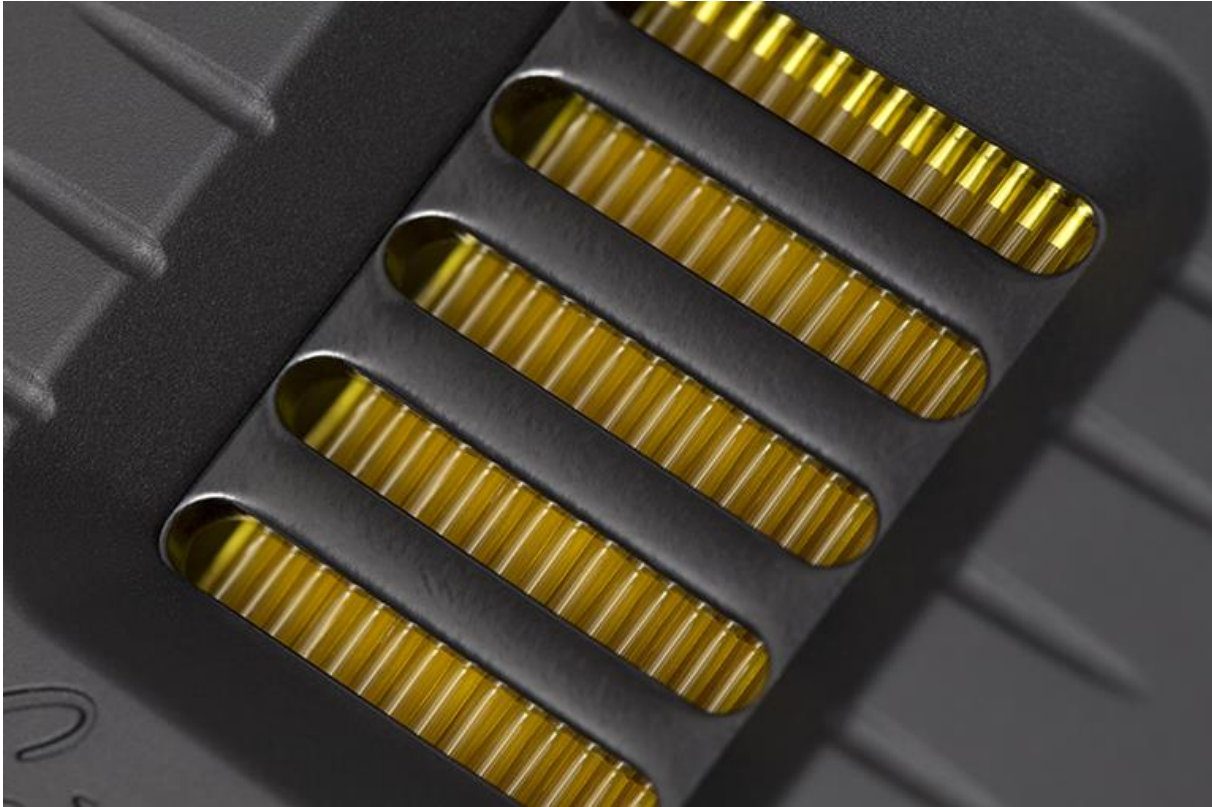
Like the M1, the Triton One is tall: 54" high at its topmost point (the top of the speaker slopes slightly down toward the rear), which is taller than average. It's also fairly heavy at 80 pounds, and feels sturdier than the other GoldenEar speakers I've experienced, such as the other two GoldenEar models with powered bass sections, the Triton Two and Three (respectively, \$2998.98/pair and \$2199.98/pair). This correlates with GoldenEar's statement that, with the Triton One, they went the extra mile by giving it thicker walls and more internal bracing than their other models.

The M1 was much wider than it was deep, but the Triton One is the opposite: its tapered cabinet is only 5.75"W in front, 8"W in back, and 17"D. The result is a fairly large speaker that isn't that intrusive in a room. Furthermore, the One's shallow base -- 12 3/8"W at its widest by 19 3/4"D -- adds little bulk to the design. Instead, it mostly adds stability -- particularly with the spikes screwed in, without which this tall, narrow speaker would fall over. The One's rounded front, which also helps it look smaller, has a curved mesh made mostly of metal, with plastic at the ends, attached to the front baffle and concealed by the sock.



GoldenEar Triton One midrange

For the upper bass, mids, and, highs, the Triton One uses two of GoldenEar's 5.25" Multi-Vaned Phase Plug (MVPP) midbass-midrange drivers (a 4.5" version of this driver is used in the Triton Two and Three), one above and one below a High-Velocity Folded Ribbon (HVFR) tweeter about 39" above the plinth -- about the highest a tweeter can be before its axis is too high above a seated listener's ears. The tweeter's output is claimed to extend up to 35kHz; it's used in all GoldenEar speakers, including those without powered bass sections.



GoldenEar Triton One tweeter

Instead of a dome or cone, the HVFR tweeter has a folded membrane that expands and contracts like an accordion to move the air. In contrast, a dome tweeter moves forward and back. One of the advantages of the HVFR tweeter is that it doesn't have the nasty breakup modes that plague metal domes (typical aluminum domes ring like hell at around 20kHz). A disadvantage of a folded-ribbon tweeter over a dome is that its dispersion is limited, particularly vertically. This means that it radiates significantly less energy above and below its axis than directly ahead. To ensure that the speaker doesn't sound dull in a typical room, GoldenEar's designers have worked around this limitation by elevating the HVFR's on-axis response. This is why various measurements of their speakers, including our own, show an upward tilt in the on-axis response toward the highest frequencies of the audioband. This is done so that the speaker's total radiated response in a room, often called its sound power, shows a proper tonal balance from the bass right up through the highs.

GoldenEar says that the One's woofers hand off to its midranges at 100Hz, which is very low, and should mean a smooth acoustic transition from the lower- to the mid-frequency drivers. The transition from the midranges to the tweeter is at about 3kHz, which again should be sufficient for a proper handoff. Keeping this crossover near 3kHz also ensures that the tweeter isn't used to reproduce frequencies low enough to cause distortion. GoldenEar also claims that because the One was designed to a higher retail price than their other models, they were able to improve the quality of its crossover components and implement a "balanced" crossover topology, which the company describes as follows: "[It] splits the electrical components and puts them on either side of the driver, rather than just on one side, which is normal. Among other things, this reduces stray capacitance in the magnetic gap."



GoldenEar Triton One woofer

The Triton One has three 5" x 9", racetrack-shaped bass drivers, whereas the Triton Three has only one (the Two has, well, two) -- which might have some wondering if GoldenEar shouldn't have switched the models' names. The One's three drivers are controlled by a 56-bit DSP engine operating at 192kHz (vs. 48/96 for the Two and Three) to maximize bass extension and improve linearity, and are driven by a built-in 1600W amplifier (vs. 1200W for the Two and 800W for the Three). Assisting these woofers' outputs are four 7" x 10" passive radiators (two per side in a balanced configuration, as opposed to one per side in the Two and Three). These three woofers and four passive radiators comprise a great amount of radiating area, with the express goal of delivering more and deeper bass than has any other GoldenEar speaker. As a result, the company specifies for the One a low-end extension of 14Hz, vs. 16Hz for the Two and 21Hz for the Three. Those specs might seem overly optimistic -- they exceed the bass range of many subwoofers. However, as you'll read below, the One's bass output was nothing short of remarkable, eclipsing that of far costlier models from other brands. The One got way down there.



GoldenEar Triton One passive radiator

The Triton One's stated sensitivity is 92dB/2.83V/m: 1dB higher than the Two's and 2dB higher than the Three's. These sensitivities are all higher than average, which is why GoldenEar specifies a paltry 20W as the minimum recommended amplification for all three. However, the maximum recommended powers are much higher: 650, 500, and 400W, respectively, for the One, Two, and Three. As with all of GoldenEar's main-speaker models, the One's nominal impedance is specified as "compatible with 8 ohms," which is rather vague.

Toward the bottom of the Triton One's rear panel is a plate containing: an IEC-compatible power-cord inlet, to power the woofer section; an LFE input jack (RCA), should you wish to drive the woofers from the LFE output of a preamplifier or receiver (I didn't); the speaker-cable connectors; and the Subwoofer Level control, which ranges from Min to Max and is vital to achieve the best bass balance in your room. My only complaint about this rear plate is a small one: a blue LED lights up to indicate when the woofers are operating (they turn on when they sense an incoming signal, and off if there's no signal for a time). On the one hand, it's handy -- you can tell when the woofers are powered on, and the blue light makes a pleasant glow behind the speaker. On the other, the LEDs were bright enough that, in my room, each speaker splashed a noticeable amount of light on my projection screen. I had to put tape over both LEDs.



GoldenEar Technology Triton One

That, though, is a small thing on what is otherwise a very well-built loudspeaker backed by warranties of five years for the cabinet and drivers and three years for the electronics.

Setup

I used the Triton Ones with a few different power amplifiers: Hegel Music Systems' H30, Simaudio's Moon Evolution 870A, Luxman's M-900u. The rest of my electronics setup remained unchanged throughout the main listening period: a Simaudio Moon Evolution 740P preamplifier and 650D DAC-transport, and a Samsung laptop computer running Windows 7 and JRiver Media Center 20. The digital interconnect from laptop to DAC-transport was an AudioQuest Carbon, while the analog interconnects from DAC-transport to preamp and from preamp to amplifier were Crystal Cable's

CrystalConnect Standard Diamond. Siltech's Classic Anniversary 330L speaker cables went from amp to speakers. All power cords were the various manufacturers' stock cords.

The two Triton Ones and my listening seat described a 7' equilateral triangle, a typical arrangement for my room. These speakers imaged so spaciouly while maintaining such solid center-fill that I probably could have gotten away with even wider placement, but I stayed away from that in order to give each Triton One plenty of breathing room: about 4' to the outside of each speaker, and about 6' behind each.

Sound

I first set up the Triton Ones with their bass dials at 1 o'clock, the level at which we'd measured the One in the NRC's anechoic chamber. Then I sat down to listen to the title track of Sade's *Soldier of Love* (16-bit/44.1kHz FLAC, Columbia), with the preamp volume set at the level I have it for most speakers. But about 12 seconds in, when the song picks up, I made a dash from listening chair to preamp to quickly ratchet down the level. The Ones were playing much louder than most speakers I've had in my room, which meant that their specs didn't lie: The One is a very sensitive design. And the bass so overpowered my very large room that the walls shook more forcefully than with any other speaker I've had here. This indicated to me that the One's slender cabinet is indeed capable of delivering some crazy-deep low-frequency output. But it was just too much.



GoldenEar Triton One woofer spider

With most passive speakers, the way to remedy bass overload is to work with room placement -- move them farther away from walls, and so forth -- or play with their port plugs, if any. Few have bass-level controls. But the Triton One does -- I simply turned their Subwoofer Level dials from 1 to 12 o'clock, which, based on what I'd seen when we fiddled with these dials during the measurement session at the NRC, reduces by about 2dB the bass level from about 100Hz down. While that might not sound like much, a reduction of 2dB across a broad-enough band of frequencies can make a profound change in the sound -- and with the Ones, it did. Their bass output no longer completely overpowered my room; instead, they sounded full, deep, powerful, and authoritative, not overbearing.

Yet even with that reduction in bass, the One still sounded fuller and deeper than had any floorstanding speaker I've listened to or reviewed here lately, including such higher-priced offerings as the Sonus Faber Olympica III (\$13,500/pair), Magico S5 (\$29,600/pair), and Polymer Audio Research MKS (\$42,000/pair) -- all fully passive designs. The Triton One also reached considerably deeper in the bass than the Definitive Technology Mythos ST-L SuperTower, which costs only 8¢ less per pair and has a powered bass section replete with passive radiators, but fewer drivers overall -- a single 6"x10" woofer and two 6"x10" passive radiators -- and a significantly smaller, slimmer cabinet. That's not to knock the ST-L -- its bass is surprisingly deep for its cabinet's size. It's just that the larger One went much lower.



GoldenEar Triton One passive radiator

As for the tautness and, thus, tunefulness of the One's prodigious bass, I can say that it didn't articulate the bass frequencies as well as the significantly lighter- but tighter-sounding Magico S5, which I reviewed just over a year ago. The S5's bass detail is top drawer, though it doesn't have nearly the weight or authority of comparably sized floorstanders or of the Triton One, which dug deeper than anything else I've experienced. Nor did the One's bass seem quite as tight as the Definitive Technology ST-L's, which surprised me -- the use of passive radiators isn't the only similarity of their designs. But the One's bass was as taut in my room as had been the Olympica III's and the Polymer MKS's. How tight you like your bass will determine if the One thrills you as it did me.

But important as the Triton One's bass response is, this review is not "all about the bass, 'bout the bass, no treble," as Meghan Trainor sings in "All About That Bass." Just as commendable were the clarity and neutrality of its midband, the exceptional extension and wonderful delicacy of its highs, and the blending of its numerous drivers. From my listening chair, the One sounded as coherent as any of the four speakers mentioned above -- no mean feat for a speaker this large and complex. The pair could also throw a soundstage that the Mirage M1's designers would have been proud of: wide, deep, and wickedly immersive.

What these traits combined to produce in my room was a sound as spacious as hell, truly full range, and exceptionally neutral and refined throughout the audioband. The Triton Ones sounded shockingly

real with much of my music, and no better example of this was provided than by the 24/192 version of Jackson Browne's *Running On Empty* (24/192 FLAC; Elektra, now available only in 24/96), reportedly culled from the 2005 DVD-Audio release of this album (discontinued), which also contained a 24/96, 5.1-channel mix. The 24/192 release sounds quite a bit different from my 2001 CD edition, and to my ears more authentic -- its greater richness and fullness were particularly noticeable through the Ones. The title track was reproduced with awesome senses of power, space, and realism -- it sounded like a real rock band playing on a real stage. The drums, in particular, had a weight and slam that were uncanny, not only for a pair of speakers at this price, but for speakers costing multiples of the price -- the ST-L, S5, MKS, and Olympica III all sound stunted by comparison. Yet all that bass weight didn't obscure the natural sounds of Jackson's voice, his guitar, or the piano to his right.



GoldenEar Triton One midrange

Much sparer and just as spacious sounding was "Mining for Gold," from the Cowboy Junkies' *The Trinity Session* (16/44.1 FLAC, RCA). I learned directly from the album's producer and engineer, Peter J. Moore, that this a cappella track was recorded a week after the rest of the album, and is the only one in which Margo Timmins's voice reached the microphone directly -- for the rest, her voice was amplified through a modified Klipsch speaker for greater presence. The Ones presented Timmins's voice center stage with such focus that it would do a pair of two-way minimonitors proud, but they also reproduced the space and noises around her with the kind of low-end depth and fullness that minimonitors can never hope to achieve -- nor could most other large speakers, since the Ones positively energized my room. (Moore told me that the deep rumblings heard throughout *The Trinity Session* are mostly the sound of a subway running under the Toronto church in which it was recorded. He also said that the recording contains information down to 20Hz -- the single Calrec Ambisonic microphone he used was capable of capturing frequencies that low -- and that his mixing and mastering of the album retained those frequencies.)

The next track, "Misguided Angel," also has tremendous weight, and has Margo singing side by side with her brother Michael, which the Ones portrayed on the stage with uncanny realism -- not only because of the stark positioning of the singers' aural images, but because of the pitch-perfect tonality, awe-inspiring re-creation of space, exceptional resolution (the microscopic sonic details of the venue

were easy to hear), and the sheer weight and presence of it all. As I listened to this, I couldn't help thinking that I'd like to drag Moore out of his control room and into my listening room to hear Trinity through the Triton Ones -- then tell me how closely this sound resembles what he heard when he recorded the album in 1987. But he lives a five-hour drive away.

In an effort to tone down the spaciousness the Triton Ones provided and get an even better handle on their sound above the bass range, I turned to Glenn Gould's *A State of Wonder*, which includes both his 1955 mono and 1981 stereo recordings of J.S. Bach's *Goldberg Variations* (16/44.1 FLAC, Columbia/Legacy). Listening to the mono version, and given the center fill I'd heard with my stereo recordings, I wasn't surprised to hear Gould's piano emanate from an appropriately tight space between the speakers and with absolutely no smear to either side, just as it should. What struck me, though, were the outstanding transparency, detail (tape hiss, recording flaws, Gould's humming and muttering), and transient attacks -- the weighty Ones now sounded fast, clean, and alive. I also liked the highs, which were lively and incisive but never edgy or bright. The One may be a big, bold, full-range speaker that can produce the low end with aplomb, but it could also sound delicate, exquisite, and utterly refined throughout the rest of the audioband.



GoldenEar Technology tweeter

The Triton One is a unique and formidable design that I think would be difficult, if not impossible, to improve on for the price. Nor can I think of another speaker that offers the sound qualities I've described for \$5000/pair -- there's a lot of speaker here. But on an absolute scale of quality unconcerned with price or practical considerations, it did have a few limitations.

Although I don't think the Triton One's bass could be improved on in terms of depth, some might wish it were a tad tighter. Also, while I found that the One could play loud enough for even my listening tastes, which tend to run louder than "normal" listening levels, the small minority who like their sound even louder might be left unsatisfied. When I pushed the Ones very hard -- to levels I wouldn't recommend anyone listen to for any length of time -- I didn't damage the drivers or cause them to distort in any objectionable way (e.g., funny noises, grungy sound, etc.), but I did notice that the

midrange and highs compressed. I also heard a resonant character in the midrange that might have been the drivers or the cabinet, or both -- it was too loud to be sure.

Of the speakers mentioned above, only the Magico S5 could play louder with less strain. The Definitive Technology ST-L, Sonus Faber Olympica III, and Polymer MKS couldn't necessarily play any louder, but all of them sounded less resonant in the mids when pushed to similar extremes. The only other speaker I had on hand and had recently reviewed that was capable of playing louder than all of these speakers, including the GoldenEar, was KEF's Reference 1 (\$7499/pair), which is astonishing in its ability to sound clean at obscene volume levels. However, the Reference 1 is a much smaller, stand-mounted design that produces far less bass than any of the other speakers mentioned.

Conclusions

GoldenEar Technology's Triton One reminds me of Mirage's groundbreaking M1, partly for the way it looks -- its cloth-covered cabinet and shiny endcaps -- but mostly because, like the M1 back in its day, it offers a unique combination of strengths: bass power and depth that even speakers costing multiples of its price can't match; outstanding neutrality across the audioband; exceptional clarity, particularly through the midrange and up through the highs; topflight soundstaging capabilities; and better driver-to-driver coherence than I thought could be managed in so large and complex a design. Because the Triton One is more sensitive than average, you don't need gobs of power to make a pair of them sing, though they'll be just as happy with a big, powerful amplifier. And the One has a dial to adjust the output of its bass section, so it won't be hard to fine-tune should it overload your room with bass, as it did mine.

The Triton One's performance across the board is exceptional. I'm sure you can't find another speaker that offers all it does -- in short, full-range, reference-grade sound -- for a price that any serious audiophile with a decent job can afford: € 5900,- /pair. There's tremendous value here, probably even more than the Mirage M1 offered. The hi-fi world needs more products like this. That's why GoldenEar's Triton One gets my highest recommendation.

Doug Schneider

Associated Equipment

Speakers -- Definitive Technology Mythos ST-L SuperTower, KEF Reference 1, Magico S5, Polymer Audio Research MKS, Sonus Faber Olympica III

Preamplifiers -- Simaudio Moon Evolution 740P

Amplifiers -- Hegel Music Systems H30, Luxman M-900u, Simaudio Moon Evolution 870A

Digital-to-Analog converter -- Simaudio Moon Evolution 650D DAC-transport

Computer -- Samsung laptop running Windows 7 and JRiver Media Center 20

Digital interconnect -- AudioQuest Carbon USB

Analog interconnects -- Crystal Cable CrystalConnect Standard Diamond

Speaker cables -- Siltech Classic Anniversary 330L