GoldenEar Triton One Loudspeaker

Truly Exceptional Sound and Value

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I've reviewed a number of great speakers over the last few years, all of which have had prices to match. The GoldenEar Triton One is an exception. It provides both extraordinary sound quality and value for money. It does not fall short in a single major area of performance, it is intensely musical, and it sells for a semi-affordable $5000 a pair. It is also a speaker that has produced an exceptional amount of unsolicited praise from outside listeners, regardless of musical taste—even among the set that regards any visible stereo equipment as an assault on its room décor.

This doesn't mean that the Triton One is free of sonic compromises or design choices—issues I'll get to later in this review. What is particularly striking about these design choices, however, is their focus on reproducing acoustic music with a natural mix of midrange and treble energy, and deep bass extension.

This focus should be the standard for all loudspeaker designs, but too many competing speakers exaggerate the upper midrange to get apparent detail at the expense of natural midrange warmth and treble air, emphasizing a "forward" sound at the expense of the soundstage perspective of live music. Others exaggerate deep bass energy at the cost of bass detail, as well as added room interaction. In contrast, the Triton Ones are striking to the extent they never emphasize one type of music or approach to recording over musical realism. The end result is long-term listening pleasure.

Features, Technology, and Their Impact on Core Sound Quality

I did not reach these conclusions without having to overcome some initial prejudices based on reading the manufacturer literature. Too many adjectives and superlatives, too many features, and too much technobabble. Once I began listening, however, I could hear the benefits of the Triton One's design features, and quickly put the inevitable marketing hype aside.

The Triton One's folded-ribbon tweeter provides some of the smoothest, break-up-free, non-resonant upper-octave musical detail I've heard at any price. It also is well integrated with the 5.25" cone midrange drivers positioned above and below it in a D'Appolito configuration. The midrange drivers operate in an unusually large two-chamber enclosure that is sealed off from the enclosure for the bass drivers.

This combination of drivers provides extremely realistic response from the lower midrange up to around 15kHz. It does so without the exaggeration or hardening of the upper midrange that can impress for a few hours or days, but then becomes irritating and creates fatigue when you listen to the upper range of instruments like piano, clarinet, flute, violin, and recorder, or female voice. The drivers in Triton One also have the clarity, speed, and accuracy necessary to reproduce brush and cymbal detail realistically (as well as applause, if you can treat applause as a percussion instrument for a moment or two).

This may be the result of the fact the Triton One seems to have a slight dip in response in the area where the ear is most sensitive to excess upper-midrange hardness and energy, but its tweeter then has a smoothly rising frequency response from around 7–8kHz upwards to 15kHz, where it then slowly drops back down to flat response at 20kHz. This rise occurs after the

limit—or well above the limit—where most people can hear musical detail in the upper frequencies, but below the limit where listeners can detect the presence of high-frequency data as a contribution to musical air and life.

The end result is that the rising response of the Triton One at the higher treble frequencies produces an added touch of life and air that is far more musically realistic to me than "punching up" the upper midrange to get detail that you will never hear at any normal listening position with live music.

The cabinet shape and the location of the tweeter and midrange drivers also help—a result of both the radiation patterns of the drivers and the narrow width of the front of the Triton Ones (a narrowness that is not as apparent from the photos in the manufacturer literature as when you actually see the speaker). Having a narrow front is only one way to produce an exceptional soundstage, and my listening to other speakers with this design feature has taught me that in practice it often does not produce the kind of stable soundstage, low levels of coloration, and uniform radiation patterns that it should in theory. It does so in the Triton Ones, and every outside listener that I demonstrated the speaker to remarked about some aspect of the speaker's soundstage detail and coherence, and its ability to produce a wide and stable listening area without altering image size or losing musical information.

The rest of the design is equally good in spite of a level of complexity that initially made me wonder whether the number of drivers and passive radiators was more a matter of sales appeal than necessity. The design features for the bass section include three long-throw 5" x 9" woofers in a semi-line-source array, a hybrid electronic/passive crossover at an unusually low 100Hz, and a 1600-watt, 56-bit, DSP-controlled Class D amplifier. There are also two passive radiators on each side of the cabinet that GoldenEar states offer some features similar to those of a transmission line.

My initial reaction from just reading about all of the bass features and looking at the complex cutaway diagram of the Triton One was that this was too many elements to be necessary, or to deliver the best bass for the buck. Well…it does help to actually listen.

The Triton's bass quickly proved to be exceptionally deep and detailed, and to have excellent dynamic range. For anyone who intends to preserve his hearing, I doubt whether the specified 14Hz lower limit has any real audible meaning; output at frequencies this low is irrelevant unless you plan to use the Triton Ones to reproduce thunderstorms, enjoy the last possible ounce of bass during a movie involving aliens destroying a major city, or attempt subsonic communication with elephants.

On the other hand, there was really good bass extension and energy output on even the lowest notes in real-world organ music, and low bass that rivaled that of many large separate subwoofers but that was far better integrated and coherent. At the same time, the Triton Ones seem to be designed to produce the best possible transient detail down to the lowest frequencies rather than maximum bass impact. The deep bass roll-off is also unusually slow and extended. The bottom octaves do not have an audible bump or peak in response just before the speaker reaches it low-frequency limit, or a sudden precipitous drop or waterfall effect at some point in the low bass.

I found the end result revealed the lifelike complexity of music from the lower midrange to the bottom octaves far better than speakers designed to emphasize bass power. This helps produce very natural and clearly differentiated bass with organ and electronic instruments. It also produces a more clearly defined bass line with electronic "drums" and synthesizer music, giving the low frequency much more real-world impact when sudden transients or dynamic shift occurred in the music.

Moreover, my sons, whose tolerance for rock, heavy metal, and synthesizer exceeds my own, were equally pleased. Turns out that even the younger generation that has drifted away from jazz and classical music can be as concerned with realistic bass detail and transient impact as a slowly fossilizing music snob.

I have heard many speakers that consistently make the bass seem louder and more persistent at the cost of blurring detail and emphasizing certain parts of the bass spectrum. To my ear, this is a far less musical and involving trade-off than the sound of Triton One. Moreover, bass dynamics are meant to be sudden and exciting; the tight and fully defined bass of the Triton gives them more dramatic and emotional impact.

This came through quite clearly on the Jean Guillou recording of an organ transcription of Mussorgsky's *Pictures at an Exhibition* [Dorian]. It also came through on my collection of Bach organ music, the usual Telarc bass drum spectaculars, and in truly massive and complex orchestral pieces with high levels of deep bass energy such as the Saint-Saëns' Third Symphony.

There is another advantage to the design of the bass system. The 1600-watt bass amplifier does so much of the "heavy lifting" that the Triton One is remarkably efficient. I could drive it easily with one of my own 50-watt tube amplifiers, and the designer uses a 24-watt single-ended triode as one of his references. At the same time, the lower bass is so well integrated that you can still hear the best sonic qualities of your power amplifier from the upper bass to the upper-frequency limits of your hearing. Because the bass amplifier is tied into an easy overall impedance load of 4–8 ohms, its use largely eliminates power-amplifier damping

SPECS & PRICING

Driver complement: Three 5" x 9" long-throw quadratic sub-bass drivers coupled to four 7" x 10" planar infrasonic radiators; two 5-1/4" high-definition cast-basket MVPP mid/bass drivers; one High-Velocity Folded Ribbon (HFVR) tweeter
Frequency response: 14Hz–35kHz
Sensitivity: 92dB
Nominal impedance: 8 ohms
Recommended amplifier power: 20–650Wpc
Built-In subwoofer power amplifier: 1600W, DSP controlled
Dimensions: 5-3/4" x 54" x 16-1/2"
Weight: 80 lbs. (each)
Price: $4995

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factor capability as a key factor in lower-octave performance.

In retrospect, I should also note that my experience with the constantly rising prices in the high end has produced a strange kind of bias. In assuming that the Triton One might have too many features for the money, I had taken truly high prices for high performance as a given. As one of my sons later reminded me, $5000 is not cheap by any standards other than those of a narrow range of high-end fanatics. A product designed for a wider range of audiophiles—and potential audiophiles—should deliver a lot for real money, and $5000 a pair is very real indeed!

Moreover, as Sandy Gross, the head of GoldenEar, pointed out to me, you can get a lot of product by having a permanent U.S.-Canadian design team covering every aspect of design and production and getting the product manufactured overseas. You can also get a lot of sound quality if you manufacture in larger numbers, standardize on key drivers, and design around a smaller enclosure by using an array of passive radiators and a sophisticated mix of bracing, damping, and upper midrange/bass enclosures.

Extended Listening

Even the best-sounding features don't matter, however, unless a speaker is more than the sum of its parts. A really good transducer must achieve the kind of synergy that makes you focus on the musical performance rather than the speaker, and do so regardless of the type of music or recording, and do so without being "forgiving" or disguising the real-world strengths and limits of given recordings and your front end.

The Triton Ones achieved that synergy with exceptional realism with the best acoustic recordings. They clearly revealed the differences between really good recordings without favoring one type over another. They are also a speaker for someone with a large musical library, rather than a speaker where you need to have a given kind of audiophile recording or music to hear them at their best.

You will hear the impact of close miking, over-complex mixing and mastering, tape hiss, mike differences, and all of the problems in new and older recordings. The Triton Ones do not, however, have some dominating sonic character of their own that emphasizes a given aspect of the music and produces the mixture of sudden insights into a limited group of recordings and listening fatigue with many others that I hear in far too many speakers at any price.

Several weeks of listening showed me that they did an exceptional job of reproducing even the most demanding symphonic, opera, and large jazz-band music. Mahler's *Symphony of a Thousand* and Saint-Saëns' Third Symphony are never going to really fit into a listening room. Neither is Wagner's *Ring* Cycle. As is the case with other truly good speakers, however, this will not prevent you from becoming deeply involved in the music, or from appreciating the fun in the jokes and occasional excesses in a Mozart opera.

At the same time, the Triton Ones provide an exceptional degree of realism with the kind of great small jazz group and chamber music recordings that actually make music seem to come alive in the face of the real-world size of a listening room. You can get lost in the lifelike reproduction of good recordings of smaller musical groups like *Jazz at the Pawnshop* or the wide range of excellent Accent and Naxos chamber music, solo voice, and instrumental recordings—forgetting the room, the job, and the day with ease.

I could not fault the Triton Ones with any female voice recording in my collection beyond the actual limits imposed by the quality of the mastering. The exceptional freedom from resonant break-up, or boost in the upper midrange, made soprano voice a consistent pleasure with even the most demanding music. The Triton Ones never disguised the sometime eccentric recording styles and musical mixes chosen by female singers like Norah Jones or Jennifer Warnes, but they also never disguised the quality of their voices and singing. Not every speaker can cope with the challenge posed by some Judy Collins recordings. The Triton Ones did more than cope.

I'd also stress their ability to reproduce instruments that can easily induce listening fatigue or even instant irritation in the "hands" of the wrong speaker. These include the recorder (try the *Scott Reiss and Hesperus Baroque Recorder Concerti* on Golden Apple GACD 7550), good but slightly too bright or close-miked clarinet recordings (Martin Frost, Mozart Clarinet Concerto and Quintet, BIS-SACD-1263), or brass chamber music (Wolfgang Bauer, Haydn Trumpet Concertos, MDG 901 1395-6)

The same was true of the all too wide range of piano, harpsichord, and solo violin recordings where miking problems or a hell-driven desire to capture too much detail highlights any midrange edge in the system. I also found the Triton Ones could make even percussion concerts a lot of fun—something I'd again not say of far too many speakers. (Try track four—"Forescore for Percussion"—on *Continuum for Percussion Quartet*, New World Records, 382-2.) Strictly a demo for my musical taste, but one hell of a test of a speaker.)

As I've already mentioned, bass performance was outstanding for any speaker, particularly one this size and price. If you like a strong bass line, you get the bass line on the recording and not the speaker's version—with either too little bass energy or the kind of slightly blurred bass definition and emphasis on one part of the bass spectrum that otherwise good speakers sometimes provide. The organ reveals its real complexity in the low bass, and sudden spikes in bass energy from a bass drum or synthesizer are tight and clean, and have real dramatic impact.

And yes, you'll have equal pleasure in the bass and in overall musical pleasure if you're a Stones or classic-rock fan. My sons, who are semi-Post Millennials and have the typical semi-Post Millenials' illusion that progress can actually occur in popular music, assure me this is true of more modern popular music, from ZZ Top to synthesizer. Another younger listener told me the Triton Ones do very well with heavy metal as well as grunge and British apocalyptic despair rock.

I can't really go further in verifying its appeal to all musical tastes. I have trouble appreciating any composer more modern than Limenius. I can't find volunteers to test the Triton Ones' performance with disco. And I will not face that challenge on my own. Even the most hardened reviewers have limits when it comes to the aesthetic sacrifices they are willing to make.

Setup and Compatibility

The Triton Ones have some other practical advantages. They are unusually system- and room-friendly. They are easy to drive

Sandy Gross: The Voice of the Triton One's Designer

Some of you may have met Sandy Gross at shows. If you have, I suspect you'll agree that he is one of the many high-end designers and manufacturers who does an excellent job of putting his products in perspective. He was kind enough to send me a note that helps explain the design goals behind the Triton One, and covers some additional features, and as well

"A major design goal of mine with everything, but especially these, was to create a speaker that genuinely could be compared with very expensive super-speakers. In particular, one of my references is the huge SoundLab 845 full-range electrostatic panel. I have always dreamed of creating a little more listener (and significant-other) friendly speaker that could deliver the musicality, imaging, coherence, etc. of a speaker like this, at a relatively reasonable cost, and that could be driven by a large range of electronics. As you may be aware, we demo'd the Triton Ones at CES with Pass Labs. I will listen to mine with a Line Magnetic SET and Atma-sphere OTLs, but they would be happy with a Peachtree integrated.

"We approached the Triton One in the same way as the designers of very expensive products and really focused on all the little details. A lot of these details don't cost more money to get right; you just have to have the expertise, take the time, and care. We put a tremendous amount of effort into voicing the speakers, not just in terms of frequency response and balance, but perhaps more importantly, in terms of driver integration and coherence. For instance, getting the powered subwoofer section to blend well with the rest of the system was a particular challenge. DSP allowed us to exactly match in amplitude and phase the mid roll-off with that of the sealed-box mid/woofer at the crossover transition point. (This DSP does 56-bit math for low rounding errors.) And one of the significant improvements in the Triton One was bringing the crossover down from 160Hz (which is already quite low) to 100Hz, and getting the woofers' sound more completely out of the midrange.

"Our previous flagship, the Triton Two, has had tremendous positive response from listeners and reviewers. For several years I was hesitant to develop a speaker above the Two, but finally got the courage to do so. I had, as my goals, to work on two major areas: to make it even more dynamic and to achieve even more impactful low-frequency performance with greater overall ease, and to work at further refining the subtler aspects of performance.

"Balanced drive is implemented on all built-in Triton amplifiers. What this means is the power amplifier has a differential output so the exact same but opposite signal appears on each driver terminal. So, unlike single-ended drive where one side of the driver is at ground and the other is the audio signal, the Triton system uses a mirror image of the audio on each driver side making the driver signal fully balanced. This is similar to how almost all pro-audio signals are handled in the recording studio. Balanced signals are the norm in pro audio. The speaker input on the Triton One is also a fully balanced differential input, again, to keep the input signal balanced. Even the DSP processor in the Triton One has a fully balanced input and output structure to reduce noise and distortion to as low a level as possible.

"Balanced drive gains its advantage as audio is only passed to the next stage if there is a 'difference' between the two audio leads. So noise from ground, as it appears the same on both leads, is not passed on. The same is true for some non-linear distortion; if the same distortion appears on both sides (and much is the same, as the sides are mirrors of each other), this non-linear distortion is not passed onto the next stage. This makes for an intrinsically cleaner signal path and we design this way as it makes our job of creating a good-sounding amplifier far easier, and the cost hit is not too large. A few very high-end amplifiers on the market are balanced designs, but this has never penetrated into the mass of audio products.

"Other improvements in the Triton One include the DSP, which has moved from 48 bits to 56 bits, and the sample rate from 96kHz to 192kHz. This results in measurably lower noise and distortion in complex filters and limiter functions. Numerical and sampling errors in DSP software are equivalent to noise and distortion. The difference between 48 and 56 bits is really a non-issue for simple amplification, but becomes important in complex functions like our limiter, for the more complex the math the more important numerical rounding errors become in signal integrity. The result is, side by side, the Triton One limiter is measurably more clean and transparent on bass transients than any other limiter we have measured.

"The Triton One amplifier utilizes many small, separate, power supplies for each circuit section to provide isolation, so there is little opportunity for signal-coupling through the power supplies. Past designs relied on single larger supplies to power everything and this can lead to signal-coupling between sections. For the most part, only the very top of high-end amplifiers opt for this small power supply architecture."

with any good amp, do not seem particularly sensitive to speaker cables (although they allowed me to hear the differences between my AudioQuest, Kimber, and Transparent Audio cables quite clearly), and do not seem particularly sensitive to AC power cords or to the ground loop problems that emerge in some speakers with powered subwoofers.

They are less room sensitive in bass performance than most speakers with their deep-bass energy and extension, but they are capable of exceptional bass performance and well worth tuning in over time to get the right distance from the rear wall. The use of passive radiators and the enclosure design seems to help reduce room interaction, favoring more realistic bass and reducing the peaks and valleys in the bass that are inevitable in any real-world listening room and that appear in some form even with the most musically natural digital room compensation.

As for the other aspects of setup, the Triton Ones can provide exceptional soundstage and imaging focus. I would strongly recommend that you first find the proper soundstage width that takes advantage of their potential to deliver a wide stage, but stop at the point where images become too wide. The Tritons are not as sensitive to sidewall reflections as some, but it is certainly better to keep them away from the sidewalls if possible and to use a moderate toe-in.

One last point. The Triton Ones are also exceptionally revealing of the rest of your audio components. I was upgrading my reference amplifiers from the Pass Labs 160.5s to the 160.8s, and I was struck by how competitive the Triton Ones were with some far more expensive speakers in revealing the improved dynamic detail of the 160.8s, and their better reproduction of lower-midrange musical energy. I was also impressed by their ability to reproduce the different but excellent ability of the EMM Labs Pre-2 SE preamp and the Pass Labs Xs preamp to reproduce the subtlest nuances of very-low-level musical detail in quiet passages without a hint of noise. Both are great preamps, and it takes a really good speaker to reveal the full range of differences between them.

The good news is that the Triton Ones are neither forgiving nor the kind of speakers that require you to choose nuances in the rest of your system to compensate in part for their sound character. The bad news is that they do reveal even slight upgrades in your front end. Beware of the resulting tendency to suffer from "front-end-upgrade disease." The Triton Ones do make improving the rest of your system more tempting.

Summing Up

The Triton Ones are one of the best buys in speakers I've had the chance to hear at anything like their price. They have all—or more—of the features and technology that anyone looking for specsmanship could want, but their real merit is that they provide sustained musical pleasure with exceptional realism. Highly recommended, and if $5000 is too much, be aware that the Triton Twos have many of the same design features and share the same tweeter. tas