

## GoldenEar Technology TritonCinema Two Speaker System

**PRICE:** \$3,495 **AT A GLANCE:** Folded diaphragm tweeters • Built-in 1,200-watt subwoofers with DSP • Super-slim center and surround speakers

# Squeeze Me. Please Me.



L aurels can be an extremely comfortable and cushy thing to rest on. (They're good for the environment, and they're hypoallergenic.) Companies and individuals often rely on past successes to carry them along like giant helium-filled balloons in the Macy's Thanksgiving Day Parade. Just because you were the first to do or invent something doesn't necessarily mean your next project or idea will be any better than a picture painted by a monkey throwing his poo at the zoo. As the investment caveat goes, "Past performance is no guarantee of future results." That being said, though, how can you not be pee-in-your-pants excited when a true giant in the speaker industry says he's going to start a new speaker company?

After the initial euphoria wears off, the first thing you might be thinking is, "Um, you know, we really need a new line of speakers about as much as we need a new line of iPod docks. Couldn't you just sit back, relax, and enjoy the juicy fruits of your labor?"

Evidently not. Sandy Gross is one of the founders of Polk Audio and founder (with engineering partner Don Givogue) of Definitive Technology. Gross has a passion for audio and a mind that is always brimming over with ideas. You'd think after helping to give birth to two of the most popular not-a-cheap-piece-of-crap speaker companies and be-coming legendary in the industry, Gross would fill his days with wine, women, and live music. Instead, he's been consumed with the idea of creating a speaker with high-end, audiophile

performance at a very affordable price.

As you probably know, audiophile-oriented speakers can be ridiculously expensive. At the Consumer Electronics Show earlier this year, I sat in more than one demo room in which the presenter casually said the speakers cost \$25,000 (or more), as if there were nothing take-the-oxygen-out-of-the-room dizzying about that kind of cash changing hands for a pair of speakers. I'm not implying that these high-end speakers are a rip-off. Most of them sound damn good. If I had that kind of scratch lying around, I wouldn't hesitate to drop it for a pair—but, as I said, *if I had the money*. For that 0.1 percent of the population who can afford to enjoy such things, I say, "Go for it." For the other 99.9 percent of us, Gross' goal of bringing high-end sound out of the monetary stratosphere down to mortal price levels is tremendously exciting. If he can pull it off, it'd be a true game-changer. It would put both the high-end guys and the more affordable mid-priced folks on notice—and make a lot of not-super-rich consumers happy.

### Was It a Mistake?

Like a kid with an unlimited American Express card in a Willy Wonka-style candy store, I couldn't wait to get the GoldenEar boxes off the delivery truck. In fact, the dust hadn't settled in the driveway before I started opening them. (It's a long driveway, but still.) It didn't take much time before I realized that GoldenEar Technology, Gross and Givogue's new company, must have made a mistake. Although I was supposed

GOLDENEAR TECHNOLOGY  
TRITONCINEMA TWO SPEAKER SYSTEM  
**PERFORMANCE** ★★★★★  
**VALUE** ★★★★★  
**BUILD QUALITY** ★★★★★

to be reviewing a 5.1-channel TritonCinema Two system, the one they sent didn't include a subwoofer. What GoldenEar Technology did send was a pair of the company's flagship tower speaker, the Triton Two, along with a SuperSat 50C center channel and a pair of SuperSat 3 satellite speakers for the surrounds. Figuring the sub would arrive soon, I went ahead and set up the rest of the system.

Visually, the Triton Two tower is stunning. It's 48 inches tall and wrapped in a black grille cloth with a high-gloss black top cap and base. The cap only covers about four-fifths of the top of the speaker, so the grille cloth extends up and over the top in the front. (It's a bit tricky to get the grille cloth to lie flat when you put the cap on, but—as with many other things in life—a little massaging gets the job done.) The top cap isn't flat. Instead, it has a slight upward curve that softens the look of the tower and will keep friends from setting their beer on it. The front is dramatically rounded thanks to a curved metal grille that holds the cloth up and off the drivers. The narrow front flares outward toward the rear of

• Each Triton Two tower has a built-in oblong-shaped 1,200-watt subwoofer.



the speaker, so the front is slimmer (5.25 inches) than the back (7.5 inches). In addition to making the speaker appear thinner, this design keeps the front baffle narrow, which can enhance the imaging. The bottom base roughly matches the shape of the speaker, and the GoldenEar Technology logo is recessed underneath the gloss finish leaving the base totally smooth. All in all, the impression is one of

SPECS			
SPEAKER:	TRITON TWO	SUPERSAT 50C	SUPERSAT 3
<b>TYPE:</b>	Three-way, tower	Two-way, center	Two-way, monitor
<b>TWEETER (SIZE IN INCHES, TYPE):</b>	1x1.33, kapton HVFR ribbon	1x1.33, kapton HVFR ribbon	1x1.33, kapton HVFR ribbon
<b>MIDRANGE (SIZE IN INCHES, TYPE):</b>	4.5, polypropylene cone (2)	None	None
<b>WOOFER (SIZE IN INCHES, TYPE):</b>	5x8, polypropylene cone (2), 7x10, fiberglass radiator (2)	4.5, polypropylene cone (2), 4x7, fiberglass radiator (2)	4.5, polypropylene cone (2)
<b>NOMINAL IMPEDANCE (OHMS):</b>	8	8	8
<b>RECOMMENDED AMP POWER (WATTS):</b>	20-500	20-200	20-200
<b>AVAILABLE FINISHES:</b>	Black	Black	Black
<b>DIMENSIONS (W X H X D, INCHES):</b>	7.5 x 48 x 15	27 x 4.75 x 2.5	4.75 x 12 x 2.7
<b>WEIGHT (POUNDS):</b>	60	7	5
<b>PRICE:</b>	\$1,249/each	\$499	\$249/each

elegance and power. Think King Arthur in all his finery during his best days at the Round Table (before that Guinevere and Lance-let thing).

The SuperSat 50C center and SuperSat 3 satellite are both shelf- or wall-mountable, and you can use the SuperSat 50 version vertically (with the tweeter rotated 90 degrees) as a main on-wall speaker. The SuperSat 50C is thin (only 2.5 inches deep) and narrow (27 inches long by 4.75 inches wide), so it's a natural complement to almost any wall-mounted HDTV. It also has rounded edges and is wrapped in cloth to match the Triton Twos. The small SuperSat 3 satellite is the same width as the SuperSat 50C but less than half as long (12 inches) and a little deeper (2.7 inches). In most respects, it looks like a baby SuperSat 50C. Taken together, the system has a striking family look that I think would work well in most any décor, except maybe my son's college one-room apartment. (I'm not sure you can even use the

word *décor* in that particular case.)

### Something Old, Something New

One of the most fascinating parts of the GoldenEar speakers is the company's High-Velocity Folded Ribbon (HVFR) tweeter. This driver isn't a ribbon, strictly speaking, as its diaphragm isn't electrically conductive in and of itself. Nevertheless, the HVFR isn't another variant of the standard, off-the-shelf dome tweeter. Such tweeters move a dome, often made from materials as diverse as silk or beryllium, rapidly back and forth—like a piston in an engine—to compress and rarefy air in the room. Nor is the HVFR like the less common conventional ribbon and planar magnetic tweeters that rapidly move a thin, flat diaphragm back and forth (again, like a piston) within a magnetic field. Instead, the HVFR uses a thin, high-temperature-tolerant plastic film that's folded multiple times so it looks like the sides of an accordion with the pleats facing forward. When modulated by the audio signal, the pleats squeeze the air between them, creating sound. So what's the big deal about squeezing? Very simply, squeezing is much more efficient at compressing air than pistonic action. In fact, in a folded-diaphragm tweeter, the velocity of the air relative to the speed of the moving diaphragm is approximately four times more than what you get with a dome tweeter. All those folds also mean that the acoustically effective surface area of a folded ribbon tweeter is around two-and-a-half times that of an equivalently sized dome tweeter assembly.

GoldenEar says this provides for better impedance matching with the air and

allows for greater control of the diaphragm. Aside from being cool to talk about at parties (although, remember, don't put your beer on top of the speakers), the claimed benefits are extended frequency response and greater dynamic capability. The design is a descendant of the Heil Air Motion Transformer tweeter from the 1970s. It wasn't widely used in the past partly due to the fact that the materials capable of withstanding the high temperatures and stresses created by the squeezing action weren't readily available. Plus, the bipolar nature of the original design was difficult to implement in a speaker with a conventional woofer and cabinet. In other words, it was slightly ahead of its time. The design of GoldenEar's new tweeter is meant to address those issues, and the company uses a similar HVFR tweeter in the Triton Two, the SuperSat 50C, and the little SuperSat 3. That can be a plus when it comes to creating a coherent and seamless surround soundfield.

Oh-so-cool accordion-style tweeters aren't the only interesting thing behind the grilles. In the Triton Two, there are two cast-basket, upper bass/midrange polypropylene drivers arranged in a D'Appolito array above and below the tweeter. Engineered properly, the D'Appolito array affects the interaction between the drivers, which helps control dispersion. GoldenEar says these mid/bass drivers can achieve a smooth linear response over a large range, although they're crossed over at 3.5 kilohertz. Using such a small sliver of their sonic capabilities helps to ensure optimal performance.

### Then There's the Woofer

Remember the mistake I thought GoldenEar made when it didn't send a sub with the system? Well,



● From top to bottom, the Triton Two is covered by a black grille cloth.



● The SuperSat 3 and SuperSat 50C match the Triton Two's aesthetic.



# HT Labs Measures

## GOLDENEAR TECHNOLOGY TRITON TWO SPEAKER SYSTEM

L/R Sensitivity:  
91 dB from 500 Hz to 2 kHz

Center Sensitivity:  
91 dB from 500 Hz to 2 kHz

Surround Sensitivity:  
89.5 dB from 500 Hz to 2 kHz

This graph shows the quasi-anechoic (employing close-miking of all woofers) frequency response of the Triton Two L/R (purple trace), SuperSat 50C center channel (green trace), and SuperSat 3 surround (red trace). All passive loudspeakers were measured with grilles at a distance of 1 meter with a 2.83-volt input and scaled for display purposes.

The Triton Two's listening-window response (a five-point average of axial

and +/-15-degree horizontal and vertical responses) measures +1.14/-4.13 decibels from 200 hertz to 10 kilohertz. The -3-dB point is at 44 Hz, and the -6-dB point is at 36 Hz. Impedance reaches a minimum of 4.27 ohms at 383 Hz and a phase angle of -38.88 degrees at 218 Hz.

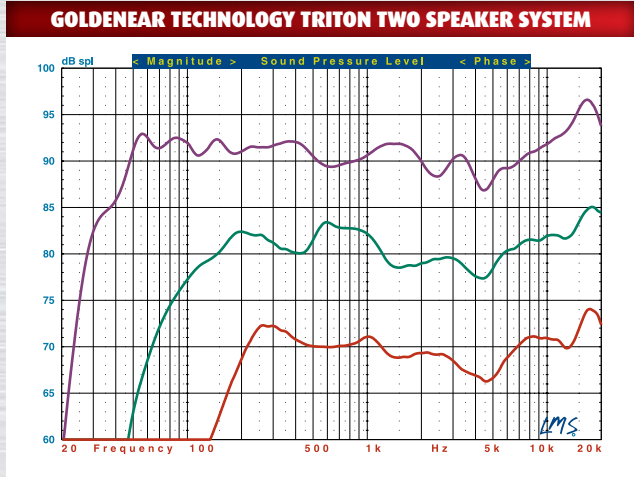
The SuperSat 50C's listening-window response measures +2.41/-

3.64 dB from 200 Hz to 10 kHz. An average of axial and +/-15-degree horizontal responses measures +2.43/-4.44 dB from 200 Hz to 10 kHz. The -3-dB point is at 107 Hz, and the -6-dB point is at 83 Hz. Impedance reaches a minimum of 4.07 ohms at 338 Hz and a phase angle of -40.66 degrees at 213 Hz.

The SuperSat 3's listening-window response measures +2.80/-3.24 dB from 200 Hz to 10 kHz. The -3-dB point is at 179 Hz, and the -6-dB point is at 156 Hz. Impedance reaches a minimum of 4.63 ohms at 356 Hz and a phase angle of -40.32 degrees at 254 Hz.—MJP

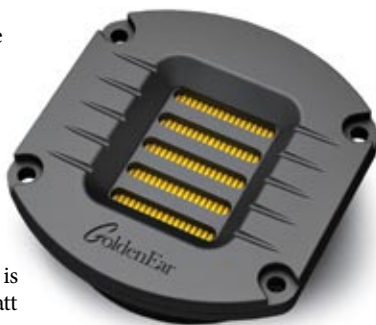
Visit our Website for a detailed explanation of our testing regimen, plus a list of our reference gear.

on the web



it was no mistake, as I soon found out after I fired up the system. The Triton Twos not only don't need a subwoofer, they'll send most standalone subs running home to mommy with their power cord between their legs. On the front of each Triton Two is a pair of 5-by-9-inch oblong or racetrack-shaped front-mounted woofers. They're coupled by the air in the box to a pair of side-mounted (one on each side) 7-by-10-inch rectangular passive radiators. All of that wooferage is powered by a claimed 1,200-watt

switching amplifier with built-in DSP, which Gross says provides extremely linear and low-distortion response. In addition, the DSP circuitry



dynamically controls the operating parameters of the subwoofer system (soft clipping, DC offset control, and discrete multi-band limiting) to continually optimize the performance. Although there is an LFE input on the back of each Triton Two, GoldenEar recommends that you hook up the speakers using speaker level and run them as full range in your bass-management parameters. If you do decide to hook up the system this way (and I did), you won't have to run a separate cable to each speaker from the surround processor sub-out. So what you essentially get is a pair of 1,200-watt subwoofers with a total of four active and four passive drivers—and no separate boxes to find a space in your room for.

### Don't Be Coy, Roy

I could be coy and make you read a little further before I gave you my overall opinion, but what's the point? Let me just say it at the outset. The TritonCinema Two system is spectacularly spectacular. That HVFR tweeter is a thing of audible beauty. It sounds truly dynamic and smooth throughout its frequency range and so delicate and light that it's reminiscent of the sound you get with a good (but much larger) electrostatic speaker. For example, "The Ballad of Bill Hubbard," the first track on Roger Waters' *Amused to Death* (featuring Jeff Beck on guitar) begins with an extremely quiet voice far to the left. With the Triton Twos, it's very far to the left, farther than you'd think possible. The soundstage is extremely wide. Despite the low volume level, the voice is quite intelligible. Not long into the piece, a dog begins barking in the distance. With the Triton Twos, the dog bark was so realistic and so well placed behind the speakers that at first I thought it was one of my own dogs barking outside the house. It was so uncannily good that the second time I played it, the effect still caught me off guard. Houston Person's saxophone on "If I Ruled the World" from *You Taught My Heart to Sing* sounded so clear and sweet, I could hear the air rushing through the

bell of the instrument. It's incredibly detailed—about as close as I've experienced to having the saxophone in the room in front of me. That D'Appolito array with the mid/bass drivers and HVFR tweeter lets Joss Stone's voice on Jeff Beck's *Performing This Week...Live at Ronnie Scott's* BD come through as powerfully as I'm sure it must have for the folks in the front row. That mondo woofer section won't let you forget it's there, either, as you can hear with the very tight and low drumbeats found on "Tribute" from Ross William Perry's *It'll All Make Sense*.

Of course, that's with two-channel material. For movies, you can take all that sweet goodness and multiply it since there's a similar HVFR tweeter in the SuperSat 50C and the SuperSat 3s. Shortly after the oft-demoted echo game ("not drums and beans for supper again!") scene in *House of Flying Daggers*, during the blind girl's sword fight with the captain, the protagonists enter a bathing area. It's filled with acoustic reflections caused by flowing water and swinging beads in the doorways. I don't think I've ever heard a system—and definitely not one at this price—that was so sweet and light at reproducing these high-frequency effects in every direction. It was much the same with *Inception* during the first dream lesson when everything around the dreamer begins to explode. Nothing seemed forced or strained. It was all as natural as can be. (Well, as natural as it can be when all the buildings and streets around you are exploding.) Speaking of explosions, in *U-571* (an oldie but still a goodie on BD), the depth charges were exceptionally moving—literally. They were some of the best I've heard or felt. The subs in the Triton Two towers are seemingly unstoppable. They sound both powerful, which is the easier thing to do, and controlled, something that isn't as easy. Even though the Triton Two





isn't tiny, it borders on the unbelievable that a pair of speakers of this size can produce bass like this. They and the rest of the drivers played about as loudly in my room as I could stand.

If I have a knock at all (and it's a very soft knock), it's that I'd like to see GoldenEar make a beefier center channel to match the Triton Two. It's not that the SuperSat 50C isn't good—it's a fantastic center channel and would likely make a great LCR in a system with a subwoofer. But the Triton Two is so damn good that you can find yourself wanting more when you go from two-channel music to multichannel and the voice shifts from a phantom center to a discrete center. There's just a tad more strength in the lower midbass region of the Triton Twos that gives vocals a bit more heft in two-channel mode. This isn't surprising considering that the SuperSat 50C is only two-fifths the price of a Triton Two—and maybe one-tenth the overall size. It's certainly not a deal-breaker for this system, it's just an area where the system could be even better. Since it's so minor, you probably won't notice it with most multichannel musical selections. I only experienced it when I switched directly between two-channel and multichannel on the same source material—something most people will never do. I never found it to be a noticeable issue with movies. If you're a purist, you probably listen to music in two-channel, anyway. Of course, the best solution would be to use a third Triton Two across the front; then you'd get the best of everything. Still, it's hard to fit a tower center channel into most rooms. However, at the price point of this system with the SuperSat 50C, it's almost unfair to even mention it.

#### **Four Will Get You Five**

Expectations are an interesting thing. Something good can still be

a bit disappointing if your expectations were too high to begin with. Likewise, something pretty lousy might appear to be better than it otherwise would if you had super-low expectations of it from the start. A reviewer must make every attempt to eliminate biased expectations that might cause him to unfairly rate a product (either good or bad), but it's impossible to totally avoid it. I have to tell you that before the GoldenEar speakers arrived, I struggled hard to keep my expectations in check. But knowing the reputations of Messieurs Gross and Givogue, it was hard for me not to expect something good—really good. I'm happy to say that my expectations were not met. The GoldenEar TritonCinema Two system doesn't sound good or even really good; it sounds phenomenally good. It's difficult to build a great speaker, but if you throw enough money at it, you can get there eventually. The thing that makes the GoldenEar system such an astounding achievement is the fact that it sounds like a five-figure system and yet costs less than \$3,500. That's the equivalent of getting a Tesla Roadster for the price of a Toyota Prius.

I don't like being wrong, and when I am, I like even less to admit it. But in this case, being wrong about the world not needing another speaker line is a blessed thing. Rather than being another set of black boxes fighting for space on a retailer's shelf, I think the introduction of the GoldenEar speaker line will be like mainlining a pure shot of guarana-and-caffeine-laced energy drink into the jugular vein of the audio industry. The combination of appearance, performance, and price is flat-out spectacular and will set lots of other companies on a chase to close the gap. That kind of competition will be good for everybody.

One of Sandy Gross' dreams was to build a true high-end speaker that was actually affordable. Someone needs to pinch the man because his dream just became reality. 🍸

#### **GoldenEar Technology •**

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