The Sound Bar Just Got Raised

Women. They're the problem. They're the ones who have ruined home theater for all the manly men out there whose only vice was reclining in front of a set of towering speakers that dominated the room like a pair of long-faced Easter Island monoliths—speakers so masculine, they used testosterone instead of ferrofluid to cool the voice coils and were topped with skeleton-ugly horn tweeters so efficient Joshua could have used them to bring down the walls of Jericho the first day (before lunch!). For additional aural excitement, in a front corner of the room, openly begging for attention and not girlishly hiding behind a couch or doing double duty as a plant stand, would be a massive subwoofer with a magnet assembly so powerful that localized rooftop occurrences of the aurora borealis would happen from time to time. Techs from the local hospital would often bring patients to the house and use the subwoofer for testing when the lab's MRI machine needed repair. But no more. The man cave has been emasculated and replaced by the female grotto, complete with bowls of potpourri and seating geometries that would make Euclid weep with grief. The coup de grâce, however, the fatal blow to any home theater's manhood, is the now near-obligatory soundbar. Long and falsely phallic, it mocks the real men in the room as it preens itself under the flat-panel HDTV.

Hyperbole and blatant sexism aside, soundbars simply aren't the most macho-looking home theater speakers. Sadly, that's not their only claim to shame. The typical experience of buying a soundbar, taking it home, and then watching a movie is the home theater equivalent of going on a blind date with a woman who has the body of Charlize Theron—only to crushingly find out she has the voice of Roseanne Barr. Mind you, I'm not saying soundbars by definition have to sound like crap. Some of the latest—and most expensive—soundbars sound surprisingly good, which is quite heartening for those of us who believe sound is as important to a movie as the picture is. My point, though, is that the design of too many soundbars is driven by form (it has to be thin, fit under the TV, and match the cosmetics), while function (oh, it has to sound great, too?) gets to hitch a ride in the trunk.

When you think about it, considering all the obstacles the laws of physics put in the way, it's amazing that any soundbar can even get within spitting distance of sounding good. After all, it's a daunting engineering task to work with a speaker cabinet that's at most 4 inches deep with left- and right-channel drivers mounted a paltry 36 inches (or less) apart—then the drivers for the center channel somehow have to get shoehorned in between. And that's just for an LCR soundbar. Up the difficulty rating substantially if you're designing a soundbar that offers a simulated 5.1- or (gasp!) 7.1-channel surround sound experience.

GoldenEar Technology's SuperCinema 3D Array is the young company's first LCR soundbar, although it already sells the flat-panel-friendly, on-wall SuperSat 50 (and SuperSat 50C horizontal center-channel) speaker. So far, just about every model GoldenEar has introduced has...
earned rave reviews, especially the superlative Triton Two towers, as well as the smaller—but only slightly less stellar—Triton Three towers. The Tritons are two toweringly incredible tough acts to follow; and considering the overall track record so far, you could say that GoldenEar has definitely set the sound bar pretty darn high—maybe higher than a dozen towers. The Tritons are two slightly less stellar—Triton Three as well as the smaller—but only 8.5-inch- tall—and, in this case, GoldenEar sent the smaller of the company’s two ear-redemption monitors and sub, SuperCinema 3D Array, GoldenEar Technology shipped a $500 pair of the company’s smallest monitor speaker, the SuperSat 3, along with the soundbar. As with any slim, hang-on-the-wall monitor speaker, the SuperCinema 3D absolutely needs a subwoofer; and, in this case, GoldenEar sent the smaller of the company’s two subwoofers, the $500 ForceField 3. All told, the speaker system costs just under $2,000, which is a bit pricey when it comes to most of the self-contained surround soundbars. But it’s quite reasonable as far as respectable home theater speaker packages go.

Cosmetically, the tightly woven black cloth grille and graceful curves of the SuperCinema 3D’s 49-inch-long, extruded-aluminum, piano-black-gloss cabinet match the rest of the speakers in the GoldenEar line, especially the SuperSat 3s. Helped by its minimal height (4.75 inches) and depth (2.75 inches), the SuperCinema 3D is simultaneously both neutral and classy when mounted under almost any—thick or thin—flat-panel HDTV. The svelte SuperSat 3s look like 12-inch-tall vertical versions of the SuperCinema 3D and become mostly inconspicuous when wall-mounted (using the speakers’ keyhole slots). While the relatively small ForceField 3 subwoofer doesn’t come with a cloak of invisibility, it occupies only a little over 1 square foot of floor space wherever you decide to put it. For a more in-depth look at the GoldenEar monitors and sub, read Mark Fleischmann’s November 2011 review of the SuperCinema 3 system he took for a spin. (Spoiler alert: Overall, with a caveat or two, Mark thought it was “an awe-inspiringly great-sounding system.”)

Remove the black cloth grille from the front of the SuperCinema 3D, and you’ll find six of GoldenEar’s 4.5-inch drivers employing cast spider-leg baskets and multi-vaned phase plugs spaced along the front baffle. There are also three of the company’s fantastic High-Velocity Folded Ribbon (HVFR) tweeters. These tweeters, if you’re not familiar with them, use multi-folded planar magnetic diaphragms that squeeze together and pull apart much like the sides of an accordion—although to a much smaller degree. One of the touted benefits of the design is phenomenal transient response; and, in my opinion, it’s one of the primary reasons why so many of the other GoldenEar speakers I’ve heard sound so spectacular.

### A Passive-Agressive Approach

At first glance, the driver configuration looks fairly standard, with each of the three channels (left, center, right) having its own HVFR tweeter flanked by a 4.5-inch woofer on each side. Closer inspection, though, reveals that the outermost woofers for the left and right channels sit about an eighth of an inch closer to that channel’s HVFR tweeter than do the inner-mounted midbass drivers. The reason for this is that those outer drivers aren’t there to add to the sound of what would appear to be their respective channels. They’re there to cancel sound from the opposite channels.

Although the GoldenEar SuperCinema 3D has no active circuitry to create surround sound, there is a bit of passive technology in the soundbar that’s meant to aggressively cancel out what’s known as interaural crosstalk. You might think interaural crosstalk is the garbled sound you make when the dentist invariably asks you a question right after he’s shoved

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**SPECS**

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This graph shows the quasi-anechoic (employing close-miking of all woofers) frequency response of the SuperCinema 3D Array’s center channel listening-window response measures +1.11/–4.39 dB from 200 Hz to 10 kHz. An average of axial and +/–15-degree horizontal responses measures +1.19/–5.84 dB from 200 Hz to 10 kHz. The –3-dB point is at 147 Hz, and the –6-dB point is at 125 Hz. Impedance reaches a minimum of 4.78 ohms at 3.8 kHz and a phase angle of –31.09 degrees at 216 Hz.

The SuperSat 3’s listening-window response measures +3.35/–3.01 dB from 200 Hz to 10 kHz. The –3-dB point is at 177 Hz, and the –6-dB point is at 155 Hz. Impedance reaches a minimum of 4.72 ohms at 370 Hz and a phase angle of –40.27 degrees at 252 Hz.

The ForceField 3’s close-miked response, normalized to the level at 80 Hz, indicates that the lower –3-dB point is at 33 Hz and the –6-dB point is at 28 Hz. The upper –3-dB point is at 140 Hz with the Lowpass Crossover control set to maximum.

Interaural crosstalk becomes especially problematic when the main left and right speakers are placed fairly close together, which is exactly the situation in any soundbar less than 10 feet in width (in other words, virtually all of them).

For years, going back to his early days as a founder of Polk Audio, Sandy Gross (who, along with engineering mastermind Don Givogue, founded GoldenEar Technology in 2010) has worked on addressing the problems related to interaural crosstalk. Results from a recent 3D audio research project conducted by Dr. Edgar Choueiri at Princeton University spurred Gross to adapt and update earlier methods of canceling interaural crosstalk between the right and left channels and make the technology an integral part of the new SuperCinema 3D Array. That’s the reason for those slightly separated 4.5-inch drivers located at the ends of the SuperCinema 3D. They are not, as I originally thought, additional bass drivers for the left and right channels. Instead, the driver farthest on the left end of the SuperCinema 3D plays a specially crossed-over, out-of-phase signal intended to cancel out sound from the right channel’s drivers that might be sneaking its way into your left ear. Likewise, the right-hand 4.5-inch driver helps to eliminate crosstalk from the left channel. In theory, getting rid of this crosstalk allows a non-absinthe-infused brain to properly interpret the spatial cues present in the recording, resulting in a front soundstage that’s exceptionally wide and deep.

A Lot of Night Music
Dave Kakenmaster, GoldenEar Technology’s western sales manager, made the long trek to my house to help set up the system and make sure everything was working properly since this was one of the first SuperCinema 3Ds off the production line. The soundbar uses keyhole slots for mounting on the wall. There’s also a stand that props the soundbar at the right angle if you’re using it on...
remarkably, we had spent the entire time listening to two-channel music. I can’t quite believe it if you’ll eat it” restaurant half an hour after my 8 p.m. dinner at the unique “we’ll shoot as far as the tracks. Four hours later, when it was well past time to leave for the home office, Kakenmaster and I had still not got redefined.

The width and punch of the SuperCinema 3D are astonishing. The SuperCinema 3D uses six cast-basket midbass drivers. The SuperCinema 3D expanded even farther, to the point of wrapping down the sides of the room to almost just past my head. On a lark (I have several lying around), just prior to packing up the system, I disconnected the SuperSat 3s being used as discrete surrounds and configured my Anthem AVM 50’s speaker settings to No Surrounds. With the surround information down-mixed into the front left and right channels, the extremely wide soundstage produced by the SuperCinema 3D one of the better simulated-surround soundbars I’ve heard, although part of the success does go to the downmixing in the front preamp.

Instant Classic
There’s no doubt about it. The GoldenEar Technology SuperCinema 3D Array is a stunningly ear-catching accomplishment that redefines the very notion of what an LCR soundbar can achieve. Of course, that doesn’t mean it’s perfect for everyone; and with its required accompaniment, it’s certainly not the solution for the person who dislikes traditional home theater gear. On the other end of the spectrum, I wouldn’t trade out a pair of GoldenEar Triton Three towers for the SuperCinema 3D, either. As good as the SuperCinema 3D is, it can’t create the amount of mind-bending front-to-back depth in the soundstage that a great pair of freestanding speakers can. But, if a standard soundbar is what you need or want, for your main system or perhaps in a bedroom or secondary theater system, the GoldenEar Technology SuperCinema 3D Array is a must-listen-to, top-of-the-shopping-list, soundbar-to-beat contender that’s destined to become a classic in the annals of home theater speakers (if such annals ever get written). In other words, when it comes to soundbars, awesome just got redefined.

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