



GoldenEar Technology SuperSub X Review

Highlights:

Manageable compact design, strong deep bass performance with excellent musicality, unique driver array technology, high-end build quality.

Summary:

The SuperSub X is GoldenEar's smallest SuperSub model to date. Utilizing two horizontally-posed active drivers and two vertically-opposed passive radiators, it's capable of bone-rattling deep bass output that's suited for both music and movies. The sub's compact design makes for an extremely manageable size that opens the doors for easy integration of multiple subs. Overall design and build quality are top-notch, rounding out a package that's a recommended buy.



Last fall, GoldenEar Technology revealed a second installment to its relatively new series of SuperSub compact subwoofers. SuperSub X, a name befitting of a renegade 1980s comic book hero, is a pint-sized compliment to the company's award winning SuperSub XXL model (released two years ago). As its since been revealed, the SuperSub X's birth was no accident. Sandy Gross and his team of engineers designed the series from scratch, intent on harnessing technologies to make subs that achieve three goals rarely found in the same package: compact size, soul shaking deep bass performance, and exceptional musicality.

The XXL model was a proving ground for GoldenEar's patented Dual-Plane Inertially-Balanced Technology, which is the engine that makes these speakers tick. According to Gross, the ultimate goal was to take that technology and apply it to a design with a significantly smaller stature. The resulting

SuperSub X is the sonic version of an iron fist in a velvet glove; sweet and innocent on the outside, but comfortably intent on dropping a gnarly subsonic hammer.



As the saying goes: good things come in small packages. Such is the case with the SuperSub X. This should be welcomed news to bass heads and audiophiles searching for the low frequency equivalent of a white whale. After all, those that want truly impactful bass must immediately resign themselves to purchasing a subwoofer sized like a mini fridge with a weight tipping 100-pounds, right? And while there are plenty of highly desirable deep bass performers possessing those attributes, the very issue of

size can limit – or outright eliminate – their utility in rooms tight on space or strict on décor. That's not to say there aren't capable small options on the market, but the SuperSub X uniquely covers all of the important bases (and covers them well).

Seeing the SuperSub X in person immediately strikes chords of curiosity and approval; its design is about as room-friendly as they come. The sub's rock-solid MDF enclosure measures a mere 14" W x 12-3/4" H x 13-1/4" D and is clad in a luscious piano gloss finish, complemented by tastefully integrated perforated metal grills on three sides. For those keeping track, it's a mirror image of its older brother, the SuperSub XXL, just a lot smaller. Both have artfully rounded edges, two shaved vertical corners, intricate fine details, and an appearance of class, which shouldn't come as a surprise to fans of GoldenEar speakers. The company certainly has a knack for edgy designs that burn with an outward beauty that's distinctive when compared to the competition.

The SuperSub X weighs nearly half as much as the SuperSub XXL, pushing only 40-pounds and offering supreme manageability. Manageable might actually be the best word to describe this little

dynamo's physical impact, so much so that it sat unobtrusively on a corner of my desk as I penned this review. This may seem rather insignificant, however I can guarantee that anyone blindly experiencing its subsonic capabilities would surely assume a more likely resting place would be a corner of my office floor!



Completing the cabinet's exterior is a rear mounted plate amp, which sports a simple collection of inputs and controls. Here, you'll find a blue status indicator light, left and right RCA input

jacks, and an LFE toggle switch. There are also two dial knobs, one for Crossover (40-150Hz) and the other for setting output level. Notably absent is the presence of an on/off switch, which was wholly replaced by an automatic circuit that's triggered when a signal is fed to the sub. This might be a disappointment to some, but auto power functionality mirrors the room friendliness designed into the SuperSub X, boosting its desirability in multi-user environments (such as a family room) where less technically inclined folks might be apt to use it.

The overall physical appearance and craftsmanship offered by the SuperSub X is more than befitting of its \$1K-plus price tag. GoldenEar truly hit this one out of the park. It carries an elegance by design that drips with quality and attention to detail, right down to the perfectly applied finish and smooth turning knobs. This sense of quality was readily apparent the second I pulled the sub from its box. It just feels right in the hands and looks every bit the part of audiophile grade gear.



Onboard Technology

So far we've established the SuperSub X's good looks, but it also has brains and brawn to match its beauty. As mentioned earlier, the sub's sound engine is a collection of active drivers and passive radiators that comprise a Dual-Plane Inertially-Balanced system. It carries two horizontally-opposed 8" long throw drivers positioned to fire out the left and right sides of the cabinet. Accompanying these drivers is dual vertically-opposed 10-1/2" x 9 1/2" planar infrasonic radiators, which fire out the top and bottom of the enclosure. GoldenEar's patent (US 9,462,391 B2) for this type of array was awarded in the fall of 2016, allowing the company to lay claim to a design that it says creates a "vibrationally balanced" system that's nearly akin to having more than one subwoofer deployed in a room. In essence, the opposing nature of the drivers and radiators keeps the cabinet inert (through internal frequency cancellation), allowing all of the energy created by the drivers to go into the room (rather than vibrating the cabinet).



The drivers are powered by a 1400 Watt Class D ForceField amplifier that's paired with a 56 Bit DSP Digital Control Module. This amp design is inspired by technology originally deployed in the company's upper-echelon Triton One tower speaker.

All of this power and tech translates into robustly capable output, which is somewhat held in check by an internal limiter designed to protect the drivers. A cursory single driver near field measurement showed roll off beginning around 25Hz, with more than enough

usable performance approaching 20Hz. Considering the SuperSub X's overall size, this kind of output is impressive to say the least. Just to note, the most powerful output from the speaker likely comes from the bottom passive radiator coupling to the floor. Obtaining an accurate measurement of the bottom radiator wasn't possible to achieve in my environment (therefore, the driver measurement is only mentioned for purposes of discussion, not specified exactness).

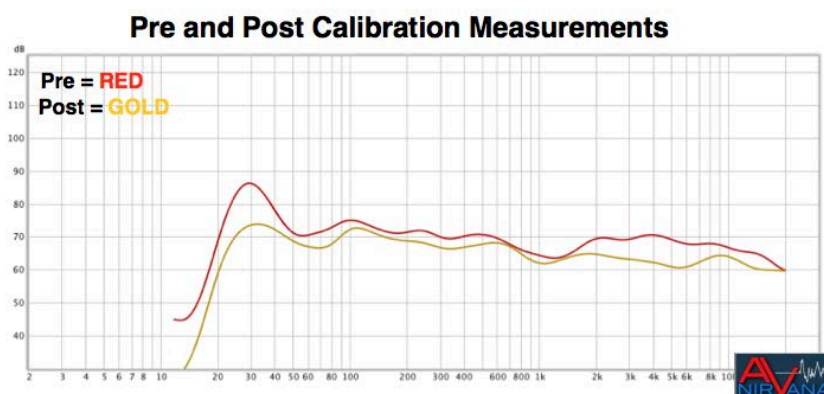


Out of the Box

Not surprisingly, GoldenEar ships the SuperSub X in style (which is par for the course when it comes to the company's products). It arrived in a double-boxed package, secured by molded Styrofoam, and internally swaddled in two bags (one cloth and one plastic). The top of the box housed a thick 10-foot long power cable and an owner's manual (complete with detailed suggestions for deployment, positioning, and fine tuning of the sub).

Set Up

After quite a bit of listening, the sub found a nice resting spot along the front left wall of my dedicated theater room, roughly 3 feet from the corner. This is the location that sounded best (tight, clean, and integrated) with material familiar to my ears. Final settings found the Lowpass Crossover set to 150Hz, calibration was applied using a Yamaha RX-A3050 (internal crossover set to 80Hz) and a Behringer 1124p Feedback Destroyer, and the Subwoofer Level was tweaked to rest one mark beyond dead center on the dial.



Pre- and post-calibration measurements taken using Room EQ Wizard at the primary listening position.

As mentioned, the included owner's manual has quite a bit to say about set up and placement, with a predominant theme of patience and experimentation. This information should be more than sufficient to help guide buyers relatively new to subwoofer ownership. One interesting note is GoldenEar's claim that the vibration cancelling properties of the SuperSub X's driver array allows for

the sub to be placed inside a cabinet or cavity. I didn't have the means to test this kind of placement, but found the suggestion of its possibility to be intriguing.

Associated Equipment

Audio equipment used during this review included an OPPO UDP-203 4K Blu-ray Player, a Yamaha RX-A3050 AVR, a Behringer 1124p Feedback Destroyer, Polk Audio RTiA5 Towers (left, center, right), Polk Audio FXiA4s (surrounds), Polk Audio 70-RTs (front/middle presence), and Polk Audio RTiA3s (rear). Dimensions of the acoustically treated demo room measure approximately 18.5-ft long x 14-ft wide x 8.5-ft tall.



The Sound

So, what happens when you power-up the SuperSub X and feed it low frequency nectar?

Magic.

It truly is a magical speaker, and most certainly one that's sure to draw the admiration of the most discerning of listeners. I found myself continually amazed by the performance capabilities GoldenEar squeezed into such a small box. It's a sonic jackhammer that confidently delivers rich bass with an evenness and balance from top to bottom.

Over a period of weeks, I challenged the SuperSub X with highly demanding material and it sang with total confidence, pushing out a deep river of crystal clear sound without any complaint. What's impressive is its ability to issue slam and impact during cinema duty, while maintaining a quick and finely tuned musical side. In fact, its musical capabilities might be what I liked best about the time I spent with the sub. It blended perfectly with my system's towers and rounded out songs with a polished power and vibrancy, never lagging with muddy or bloated output. This isn't to say that movies were underserved, because they weren't. The SuperSub X is more than capable of complying with the heavy demands of low frequency effects such as explosions and the like. As noted, its realm of operational effectiveness rapidly declines around 20Hz, which takes ultra-low frequency performance out of the picture. But, the SuperSub X's performance needs to be analyzed with size in mind, and its quality and depth of bass output (pound for pound) is absolutely mind boggling.

Here are a few highlights I experienced during demo sessions:

The Chainsmokers Collage EP (CD)

Three popular House/Pop songs standout on this EP: "Closer," "Inside Out" and "Don't Let Me Down." Musical tastes and qualities aside, these tracks have plenty of layered depth to test the prowess of any sub, and the SuperSub X took the challenge without batting an eye. The sub's musical nature was simply off the charts, easily filling my theater room with a controlled smoothness,

revealing low frequency subtleties that made the tracks pleasing to the ear. It also projected tightness to its low-end punch that snapped with the tracks' high frequency electronic attack.

Plenty of power and control were on display, making for a match made in heaven.

Norah Jones Come Away With Me (SACD)

Norah Jones' hit album *Come Away With Me* is a favorite demo disc, and a perfect follow up to the bass-pounding affair offered by The Chainsmokers. *Come Away With Me* has a subtler low-end driven by a bass guitar, and its smoothness is crucial to the album's overall sonic character. Diving right in, "Seven Years" instantly demonstrated the sub's ability to deliver controlled and detailed bass. It sounded natural and revealing, blending perfectly with the song's other instruments. I experienced the same presentation with "Feelin' The Same Way." The smoothness of the song's bass was to perfection, once again shining with detail and character. Finally, "Turn Me On," allowed the sub to demonstrate its ability to keep low frequency detail tight and snappy.

Through every track on the album, the SuperSub X crafted smooth detailed bass that never felt constrained or unwilling to deliver intended depth. It was a presentation that led me to listen to *Come Away With Me* several times over, and I thoroughly enjoyed getting reacquainted with an old friend on new turf.

Meat Beat Manifesto Now (CD)

At this point in the review, the SuperSub X had confidently handled diversely layered bass offered by The Chainsmokers, and gave white glove service to the smooth and nuanced requirements of Norah Jones. That left me wondering: how would it handle an outright obnoxious bass attack capable of crushing middling speakers into whimpering submission? I present to you Meat Beat Manifesto's *Now* single, a rare hidden gem from an innovative techno/industrial/dub band that's been creating cutting edge music for nearly three decades. This particular single remixes the song "Now" using various kinds of torturous bass, including bass guitars, with thunder and punch.

I couldn't help but to sit back and smile as the SuperSub X laughed at my challenge, taking the demands of each track and creating perfectly tight and controlled bass at reference levels, never once cracking or sounding as if limitations had been found. It reached deep, too, reproducing the tracks to perfection. Truthfully, there were times that I braced for signs of malcontent, but those moments never came close to arriving. I've been listening to this disc for nearly 25 years on numerous systems, and this particular session may have been one of my favorites, more than proving the SuperSub X's validity and prowess.

Hanna (Blu-ray)

Leaving music behind, it was time to challenge the SuperSub X with Blu-ray movie material. Having crushed my Meat Beat Manifesto *Now* challenge, I immediately reached for one of my favorite films: *Hanna*. This film (and its Chemical Brothers soundtrack) is laced with challenging and nuanced bass. Much like *Now*, *Hanna* can expose and abuse unworthy speakers. The sub delightfully portrayed LFE subtleties (such as the rumble of a building's engine room or the hum in an airplane cabin) to perfection. And while it didn't deliver palpable power in the regions below our capable hearing, it delivered plenty of slam and room filling sound as the film's soundtrack pulsed and hammered away. The emphasis here was on the SuperSub X's ability to deliver clean and hard-hitting bass (which is especially present in the Chemical Brother's glorious sonic attack).

Interstellar (Blu-ray)

Next, I decided to enter the depths of space with a viewing of *Interstellar*. This is a film known for its punishing bass, especially present as the crew exits our solar system and when Cooper enters the black hole. Taken to reference levels, the SuperSub X dished out clean bass in spades without a single

hint of distortion or bottoming out; it was a sharp presentation. I did note the absence of some sub-20Hz material, however there was plenty of low frequency power and oomph energizing my room (especially noteworthy during the arrival of the massive waves on planet Miller). Those waves sent rumbling shockwaves through my theater room, with absolute control and clarity.

As I sat through music and movie demo sessions, I couldn't help but marvel at the consistency of depth and presentation the SuperSub X offered. It's a product that delivers big on performance from a box that's impossibly small.



Conclusion

Last fall, I strolled into GoldenEar's CEDIA demo room and was greeted with a blanket of delicious bass. The company had deployed a single SuperSub X in its 16' W x 24' L x 9' H listening space and was proudly letting it loose. According to Sandy Gross, they arrived at the event with plans to run two SuperSub Xs in the room, but ultimately only found the need for one.

"We set the system up with one and it sounded perfect," Gross later explained. "We simply didn't need the second one."

The bottom-line truth is the SuperSub X plays many times its size, capable of driving a jaw-dropping show in a typical room. I cannot over emphasize the quality of deep bass it outputs. And with convenience, appearance, and affordability on its side, the ability to deploy multiple SuperSub Xs (two or four) becomes a very real possibility. It's a sub you need to hear to believe, and I'm fairly sure it's sent GoldenEar's competition scrambling.

The SuperSub X gets my resounding stamp of approval. *Highly recommended.*