

“SUB 2 is a helluva ride ...

LEFT ME SCARED SH**LESS ...”

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“I’ve never heard a sub that approaches the performance of the SUB 2. This is 230 pounds of pure, pulverizing home theater excitement and it earns my highest recommendation.”



Shown in Black Ash

by Shane Buettner

So, I’m wheeling this ginormous 230-pound Paradigm subwoofer down and around the side of my house to the double-door daylight basement that serves as my home theater room. Being impatient, I’m doing this by myself and hoping like hell I don’t tip the thing over and watch it roll end over end down the slope in my backyard. About this time, it occurs to me to wonder, “Why am I even reviewing something this big?” The answer that came to mind is probably the same reason people will buy this powder keg of bass. Because I can.

Of course, there’s more to it than that. At CES, the best home theater demo I saw and heard was in the Anthem room, with Anthem’s electronics and sister brand Paradigm’s speakers and subwoofers. The bass was sensational, thunderous, and room shaking, and yet it was strikingly refined. That was the first time I saw the SUB 2, a 4,500-watt subwoofer (rated RMS, and never mind if you can actually get that out of your wall), with six 10-inch woofers arrayed in pairs, firing out of three sides of the cabinet. You read that right. I was every bit as awestruck as you probably are now. Why would Paradigm design and build such a thing? Because they can. In home theater and in life, it’s my firm belief that anything worth doing is worth overdoing. If that’s your philosophy too, read on, because the SUB 2 is a helluva ride.

POWERHOUSE AND POLISH

I already threw out some impressive numbers, but there’s more to this sub

than that. The driver cones are mineral-filled polypropylene, with motor/magnet structures that weigh 25 pounds each. That’s over 150 pounds in the drivers alone, if you’re keeping score at home. The three pairs of drivers fire out of three separate sides of the unusual hexagonal-shaped, sealed cabinet in what Paradigm calls Vibration-Canceling Design Architecture. The opposing forces of the drivers in this alignment cancel each other out, so the cabinet doesn’t vibrate or walk around on its own. No matter how hard the sub is cranking along, you hear the sub and not its cabinet singing along or rocking back and forth. For a super-sub with six drivers, the in-room footprint is smaller than you’d think, measuring right around 24 inches in all three dimensions. That’s not dainty by any stretch, but frankly, it sounds like it’s a lot bigger.

The electronics are every bit as impressive as the mechanical elements. The amplification is efficient, Power Factor Corrected Class D with integrated DPS processing for signal shaping and distortion reduction. About that ludicrous power rating, the guys at Paradigm—with straight faces I might add—claim the SUB 2 can deliver 4,500 watts (9,000 watts peak), but only if you and your electrician hook that sucker up to 240-volt service. I don’t have an electrician on call, so I had to live with a measly 3,000 watts (rated) continuous with my sissy-pants 120-volt service. Again, I’ll leave it to others to debate whether that much power can get out of my or anyone

else's walls to the sub, but here's my tease on that: What I heard with my 120-volt service left me scared shitless to hear what this thing would sound like with 240 volts.

"... this sub's -3 decibel point is a ludicrous 12 Hertz. 12 FREAKING HERTZ! ... bass was sensational, thunderous and room shaking, and yet it was strikingly refined."

On the back panel, there are dual RCA inputs, one balanced/XLR input, and a USB connector for the Paradigm Perfect Bass Kit, which I'll map out later. There's also an Auto On selector, which turns the SUB 2 on when it detects an input signal, plus adjustments for Level (volume), Subwoofer Cut-off Frequency, and Sub/Sat Phase alignment. I ran it with Paradigm's Perfect Bass Kit and left all three controls at high noon.

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PERFECT BASS?

Perhaps the SUB 2's most impressive feature is its inclusion of the Perfect Bass Kit. The PBK is essentially a stripped-down version of the heralded Anthem Room Correction system that works only in the low frequencies. The SUB 2 ships with a substantial microphone, as well as the PBK software and unique microphone calibration files on a disc (the software is tailored to the response of each individual microphone for accuracy).

You load and then run the PBK software on a PC and connect both the microphone and the SUB 2 to the PC via USB. The PC sends test tones to the SUB 2, and you measure in at least five different in-room positions. The PBK evens out the SUB 2's in-room response, flattening both peaks and dips.

What if your AVR or surround processor already has a room-correction system? Paradigm recommends that you use the PBK with the SUB 2 first and then run the other room correction, which should theoretically see flat bass response and leave the low frequencies alone. I'm using Anthem's D2v surround processor, which uses Anthem Room Correction. Paradigm's recommended procedure worked well, and the ARC graphs confirmed that no extra EQ was applied to the SUB 2. I did find one oddity. During the SUB 2's stay in my theater, I test-drove an Integra DHC80.2 surround processor with Audyssey MultEQ. I ran the standard Audyssey correction, which seemed to work well, but Audyssey saw the SUB 2 as being nearly 30 feet away from my main speakers. When I tried to perform an Audyssey Pro calibration, the subwoofer data failed to load. I went back and forth with Audyssey; I suspected that MultEQ detected the sub as being so far away because of the latency that the DSP processing introduced.

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GO BIG OR GO HOME

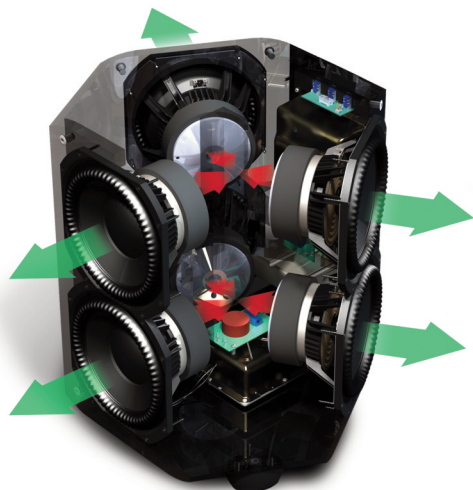
I have one confession to make up front. Unlike virtually all other speaker and sub reviews in the magazine, the SUB 2 was measured before it was shipped to me, and I was aware of the measurements. As you can see in HT Labs Measures, this sub's -3-decibel point is a ludicrous 12 Hertz. 12 freaking hertz! The measurements came with a note from audio technical editor Mark Peterson. We measure speakers in an automotive bay that we share with the car magazines in our parent company. The room is big enough to house at least a dozen automobiles, trucks, and SUVs and has a ceiling over 15 feet in height. When Mark ran the frequency sweeps, the SUB 2 rattled dust out of the rafters, something that hasn't happened before or since. Knowing this thing plays really loud, really low in a huge space didn't prepare me for the way it would energize a small space like my 26-by-17-foot theater room. In spite of its good size, there's only one spot a sub works in my room: up in the front left corner. With the PBK on my

side, plus Paradigm's recommendation for corner placement, I felt confident I'd get great performance. Man, was I right. But the first thing I had to acknowledge was that I could no longer keep the doors in the back of the room (one to a walk-in closet I use for storing gear, the other to a bathroom) closed during movie nights. The SUB 2 would damn near shake them off their hinges if I didn't leave them open.

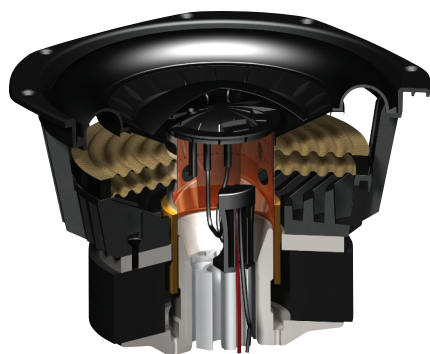
"Equally impressive was how well the SUB 2 kept up with the swift transients in the action that follows as a truck chase turns into a jet fight ... extremely tight, punchy, and well defined."

Perhaps more remarkable than the SUB 2's brute strength is its sense of texture and detail. I had no idea what the hell was going on in those lower frequency ranges. There's far more nuance in the low frequencies in modern movie soundtracks than I'd have ever believed. In *Terminator Salvation* in DTS-HD Master Audio, the big-ass terminators are an LFE symphony unto themselves. The tapestry of crushing robotic steps, rocket launches, building demolition, and a really loud and low sonic signature effect for the terminators simply amazes anyone I play it for. And isn't that a big part of the fun? This is the kind of sub that you'll love to show off for your friends and neighbors. LFE thump in home theater is like the long ball in baseball; even the chicks dig it.

Equally impressive was how well the SUB 2 kept up with the swift transients in the action that follows as a truck chase turns into a jet fight. The quick punch-in-the-stomach effects in all the various weaponry of *The Hurt Locker* and many scenes in Robert Zemeckis' wild *A Christmas Carol* were extremely tight, punchy, and well defined. Another impressive feat is that, unlike a lot of big thud-pucker subs, you only hear this one when it's called for. Working with the PBK in conjunction with ARC, I never heard it creep into male vocals or dialogue when I didn't wish it to. It's a surprisingly considerate houseguest in that respect. Until it gets loud, low, and intense, it simply does its job unnoticed, which is exactly what a subwoofer should do.



SUB 2's Sound Cancelling Technology



SUB 2's Bass Driver Technology

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Many nights when the SUB 2 was in my setup, I dug deep into my Blu-ray collection, looking for new challenges in lossless audio. I grabbed some oldies but goodies that dug the deepest and loudest. While the entire movie is a soundtrack showcase, when the alien ships first rise out of the earth in Steven Spielberg's *War of the Worlds* remake, the in-room pressure was simply insane, and the scene was that much more ominous. It was physically uncomfortable, but in a good way (I did maintain control of my bodily functions even though it was a struggle). The only aural confusion it created was that, at times, I couldn't distinguish the movie soundtrack effects from my room and the rest of my house protesting against the immense pressure. I was ducking for cover during the early cannonades in *Master and Commander: The Far Side of the World*, and *Cloverfield* woke up my sleeping six-year-old. Time for Dolby Volume to take the edge off.

"... rhythm and pace ... impressive articulation with music ... film scores — were more than well served ... stunning ... just the right amount of heft and foundation ... pacing was surprising only because the SUB 2 can be such a brute when it needs to ..."

My Vandersteen 5A main speakers feature their own built-in powered subs. The ARC system measured them but selected a highish 60-Hz crossover to the SUB 2. I ignored this and ran them full range. For additional testing, I used the 60-Hz crossover and played multi-channel music selections on concert Blu-rays and stereo CDs to hear how the SUB 2 fared. "Vultures" on the *Where the Light Is: John Mayer Live in Los Angeles* Bluray showed how adept the sealed-cabinet SUB 2 is at maintaining a jumping rhythm and pace as well as very impressive articulation with music. Film scores on CD like Hans Zimmer's stirring works in *Inception* and *The Dark Knight* were more than well served. They

were simply stunning, with just the right amount of heft and foundation, but nothing more. Their pacing was surprising only because the SUB 2 can be such a brute when it needs to be.

"... unlike a lot of big thud-pucker subs, you only hear this one when it's called for ... I never heard it creep into male vocals or dialogue when I didn't wish it to ... Until it gets loud, low and intense, it simply does its job unnoticed, which is exactly what a subwoofer should do."

CONCLUSION

There are other über-subs out there, and I haven't heard them all. But over the years I've been in this biz, a lot of subs have passed through my room, and I've been treated to home theater demos of all kinds all over the world. I've never heard a sub that approaches the performance of the Paradigm Reference Signature SUB 2. This is 230 pounds of pure, pulverizing home theater excitement, and it earns my highest recommendation. Unlike other subs, you needn't worry about whether your associated gear is up to the challenge. With this one, you need to be sure your house is structurally sound enough to withstand it. Why should you spend the money on this behemoth of a powered subwoofer? Because you can.

"What I heard with my 120-volt service left me scared shitless to hear what this thing would sound like with 240 volts."