

OEM Systems

ICBM Bass Mgmt. System

BY JOHN SCIACCA



OEM Systems' Integrated Custom Bass Management (ICBM) system.

Today the industry as a whole understands bass, room correction, and equalization a lot better than it did 20 years ago, but getting good, powerful, and consistent bass throughout a room remains a challenge.

Todd Welti of Harman International wrote a terrific paper titled, "Subwoofers: Optimum Number and Locations" that determined the optimal number of subs in a room is four, with ideal locations being either at the mid-point of each wall or one in each corner. Of course, in the real world, multiple subs can be difficult to pull off, especially when you factor in the budget of four subwoofers and that most homeowners often don't want one large black box sitting out in the room, much less four of them.

I've been doing home theater installations for nearly 20 years, and I've yet to have the opportunity to install a four-sub system or really even listen to one outside of tradeshow demos. So when OEM Systems approached me to review its Integrated Custom Bass Management (ICBM) system featuring four in-wall subs, I was thrilled.

Serendipity was on my side as well, as I was in the midst of building a new room onto my home. This 18.5-by-12.3-by-9-foot (LxWxH) finished space would serve as my new equipment review room, and gave me a chance to try out OEM's in-wall subwoofer system in a complete start-to-finish installation, from

pre-wire to trim out, to install and testing.

OEM Systems is located in Reno, NV, and has been involved with the custom installation space for nearly 30 years. The company offers an array of products from "good" to "luxury," and its ICBM system is designed as an affordable solution that is scalable from one to four subs. The system includes four SE-80SWf eight-inch, long-throw, in-wall/ceiling round woofers, four ENC-816LP in-wall acoustic enclosures, and one P-500Xb Class D amplifier, and the entire system retails for \$2,700 with high dealer margin. (The two-sub system, OEM's most popular, retails for \$1,600.) OEM includes both round and square grilles, letting you finish the look as needed, and offers optional in-room adaptors if you wanted to use the enclosure out of a wall (say, slide it under a couch), and longer brackets to accommodate widely spaced joists.

From the outset, I was super impressed with the documentation OEM provided with each component. This extra attention demonstrates a thoughtfulness of design and care for both product

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775.355.0405
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Kudos

Affordably and invisibly delivers even, room-filling bass

Concerns

Doesn't deliver the deepest "feel-in-your-chest" notes; no individual control

Product Specs

- ▶ P-500Xb amplifier delivers 90 watts RMS per channel into 8 ohms, bridgeable up to 500 watts RMS into 4 ohms
- ▶ Six precision variable controls for sub input level, 30Hz boost, subsonic filter, phase adjustment, power range limiter and low pass crossover
- ▶ SE-80SWf driver frequency response 30Hz – 120Hz, 150 watts max power handling
- ▶ Speaker cutout dimensions 8 5/8 inches diameter, 3 7/8 inches deep; frameless grille 9 7/8-inch diameter; includes round and square frameless magnetic grilles
- ▶ ENC-816LP enclosure fits in standard 2x4 stud bay, and acoustic suspension design is tuned specifically for the SE-80SWf subs
- ▶ Dimensions:
 - ▶ P-500Xb amplifier: 17.75 x 2.2 x 14.6 inches (WxHxD) 10.4 pounds
 - ▶ ENC-816LP enclosure: 13.5 x 29.56 x 3.38 inches (WxHxD)

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and installer not often seen these days. For example, the owner's manual included with the enclosure features a section detailing subwoofer placement options in the room as well as different advantages and drawbacks to each.

The amplifier's manual offers a great primer on low-frequency acoustics, along with an explanation of phase and several charts showing response curves of different adjustments found on the amplifier. The 1U amp can be rack mounted and features multiple rear-panel adjustments such as sub input level, 30Hz boost, phase, and crossover to best blend the subs with the main speakers. The sub has a 12-volt trigger to power on from another device, or can turn on when sensing a signal. To deliver maximum performance, OEM designed the amp to run in bridged mode, where it can deliver 500 watts to the four subs.

I chose an in-wall approach, taking advantage of the enclosure's 3 3/8-inch depth, going low (drivers approximately 18 inches above the floor) and as close to the room's four corners as studding permitted. Once installed, I wired the speakers in series-parallel to deliver a 4-ohm load to the amp, broke out an SPL meter, level matched the subs to the main channels, and set about to listen.

Walking around the room, it was immediately apparent that the bass response was far smoother than that of a typical one-sub system. At virtually

every position of the room—certainly through a typical multi-row seating environment—there were very few noticeable peaks and nulls, just smooth, even bass.

To compare performance, I listened to the system with just two front subs and then one corner sub, and in both cases it was obvious that having four subs not only provided more bass, but also significantly smoother response. Interestingly, due to phase-cancellation issues, having two subs actually produced the worst, most uneven sounding audio in my room.

To quantify what my ears were hearing, I took several—OK, like 100—measurements using Room EQ Wizard (REW) to see what was happening with different sub and amp configurations at different seating positions. The chart showed that the four-sub layout delivers significantly smoother, more even bass, and more output in the lowest octaves. Further, the seat-to-seat measurements with four subs were virtually identical, where they varied wildly with each other sub layout.

The four eight-inch subs mated wonderfully with the room, producing bass that seemed to emanate equally from everywhere, totally “un-localizable.” I let a pair of Origin Acoustics OS56W speakers handle main left/right duties, and this proved a potent combination, demonstrating that the ICBM system would pair beautifully with any in-wall speaker system, making for a fully discreet speaker install.

Music lovers will appreciate the audio quality of four in-wall 8-inch subs, as they produce terrific depth and detail and a very “audiophile” low-end quality. The eight-inch driver is tight and responsive and very musical in performance. Having four of them together not only evens out bass response in the room, it also produces more output at the lowest frequencies. Bass notes have clear detail and definition, letting you both appreciate and ascertain the different plucks of Paul Chambers' double-bass on “Kind of Blue” while still delivering the mega-low notes from The Crystal Method's “High Roller.”

While the subs can deliver the goods for movies, they definitely didn't produce the same visceral quality as larger, freestanding subs. For example, the Domsday finale battle at the end of *Batman v Superman* has several moments where my reference sub system (Definitive Technology's massive \$3,000 SuperCube Trinity Reference) shook my room's foundation. In comparison, while the OEM's energized the air in my listening room, they barely produced any activity I could feel in my feet and none of that “punch in the chest” deep bass that biggest and best subs do.

Without question, four subwoofers produced more even bass throughout my room. For times when budget and aesthetics play an equal role in your install, or for customers looking for superior music reproduction, OEM's ICBM System delivers the goods.