

Outlaw Audio

Integrated Controlled Bass Manager (ICBM)



Every time I review one of the new high-resolution audio players, either DVD-Audio or Super Audio CD (SACD), I go ballistic because none of them performs bass management correctly for the new discs — and most don't do it at all! You might think a player has this capability when you go into its setup menu and choose between "large" and "small" speakers. But these controls affect playback of Dolby Digital or DTS material *only*. High-resolution audio emerges naked from the player's multichannel analog outputs. Since the analog multichannel inputs on A/V receivers don't have bass management either (their "large"/"small" settings also affect only Dolby Digital, DTS, and — sometimes — CD playback), you're likely to get full-range material hitting every one of the main speakers in your system when you play the new multichannel media.

By "full-range" I mean, containing bass below 100 Hz. If your home theater speaker system — like most — consists of a subwoofer and small satellites (and "small" means any speaker whose woofer is less than 10 inches in diameter), the satellites will probably not be able to handle full-range DVD-Audio signals. Either they won't reproduce the lows at all, shifting the program's tonal balance, or they'll distort them in the attempt — possibly badly when the levels get high. In the worst-case

scenario, very small satellite speakers could be nuked by humongous deep-bass peaks. That's why you need a proper bass-management system — to strip the deep bass out of the channels feeding speakers that can't handle it and "redirect" it to the speakers that can, which usually means the subwoofer or possibly the front left/right speakers.

Fortunately for multichannel-audio enthusiasts and even movie buffs, Outlaw Audio's ICBM, for Integrated Controlled Bass Manager (clever), is the *most* proper bass-management system I've encountered. More versatile than *every* other consumer-level bass-management system I know of — whether in an add-on component or built into a digital surround receiver, preamplifier, or processor — the ICBM amounts to an overwhelming first strike against the almost unbelievable oversight of the manufacturers of high-resolution equipment. It is also quite reasonably priced for the functions it performs.

If you're extremely critical about sound quality, you should seriously consider the ICBM even if you already have digital bass management in your system and want only to play DVD-Video discs and CDs, forgoing the high-res wonders, such as they are, of DVD-Audio and SACD. You might want to supplant your "native" bass management with the ICBM's because the ICBM lets you set the bass-stripping high-

pass crossover frequency independently for each channel. A few high-end processors also permit that, but instead of giving you a single choice of "large" or "small" speaker size, the ICBM lets you select the optimal crossover point, between 40 and 120 Hz, using its front-panel dials (the manual lists appropriate settings for different woofer sizes). You might benefit from using the ICBM's 60- or 40-Hz setting even if you have largish main speakers — especially if your subwoofer is also large or otherwise extremely capable.

Another feature I like a lot is the ICBM's provisions for stereo subwoofers. While it's true that our ears can't localize

fast facts

KEY FEATURES

- Bass redirection for all five main surround sound channels, plus back surround
- Left/right front and surround bass can be separately redirected for stereo subwoofers

INPUTS/OUTPUTS front left/center/right, surround left/center/right, LFE analog line-level inputs; front left/center/right, surround left/center/right, subwoofer left/right analog line-level outputs

DIMENSIONS 17½ inches wide, 1¾ inches high, 7 inches deep

WEIGHT 5 pounds

PRICE \$249 (sold via Web site only)

MANUFACTURER Outlaw Audio, Dept. S&V, 18 Denbow Rd., Durham, NH 03824; www.outlawaudio.com; 866-688-5297

test report

HIGH POINTS

Extremely versatile bass management.
Superb audio performance.
Excellent manual.

LOW POINTS

No channel-level adjustments.
No speaker-distance adjustments.

deep-bass sounds, that doesn't mean the low-frequency phase differences from channel to channel that creep into stereo and multichannel recordings of acoustic music — differences that help to create a sense of space — aren't worth trying to reproduce. The ICBM lets you do this if you use two subwoofers because bass from the left and right front and surround channels is properly redirected to each. For example, a superb Teldec DVD-Audio recording of Bach pipe-organ music played by Ton Koopman sounded extraordinarily realistic, though when I had listened to it previously over the same speaker system without proper bass management, it sounded rather anemic. Previously, all of the bass in the main channels was lost, and all I heard down there was the bass recorded in the mono LFE (low-frequency-effects) channel. But with the ICBM in place, the sound was so rich and "right" that it provided the best possible argument for the musical value of multichannel recordings.

The refinements don't stop with stereo subwoofer outputs (which are switchable to mono if you have only one subwoofer). It's little appreciated, even in the music industry, that both DVD-Audio and SACD are six-channel systems, not simply 5.1-channel. What in the Dolby Digital and DTS world is the limited-bandwidth (thus ".1") LFE channel has in the high-res world been turned into a full-range channel, meaning that we could have music recordings with three discrete surround channels as well as three in front (but no LFE).

Of course, some movies on DVD-Video (like *Gladiator*) already have quasi- or actual 6.1-channel Dolby Digital Surround EX or DTS-ES soundtracks. The ICBM has a separate input for a back surround channel (Outlaw calls it a center surround), and unlike some 6.1-channel A/V receivers, it treats the back surround to the same crossover-frequency selection and bass redirection as the other main channels. That makes the device future-proof against the

day when the music business finally discovers that the back surround channel is useful (some music producers don't even like using the front center channel).

There are other refinements, some of which may be important for your setup, but you can learn about these from the manufacturer's Web site. More important to me is the ICBM's simple hookup: you connect it between your DVD or SACD player and your receiver or preamplifier — or, to use it for other sources as well, between your receiver's preamp and power-amp sections or between a separate preamp and power amp. The excellent manual (in plain English with good diagrams) is easy to follow, and the ICBM's lab performance was also excellent.

The only areas where I found the ICBM deficient are its lack of channel-balancing controls (this function has to be performed elsewhere in the system) and its inability to compensate for different speaker distances (the ICBM is an analog device, and this function must be done digitally). Otherwise, the strategic planners in Outlaw Audio's war room are right on target with this superbly designed component. It is the first product to abrogate what seems to be an ABM (anti-bass-management) treaty among high-res-audio manufacturers, and it is the one ICBM I'd like to see proliferate. **SW**

in the lab

Except for the subwoofer-output slope measurement, the numbers shown below are for the left front channel, but performance of the other main channels was similar.

Crossover slopes

12 dB/octave rolloff below crossover point

Frequency response.....from -3 dB at crossover point to -0.3 dB at 96 kHz

Noise level (A-wtd, re 200-mV input).....-94 dB

Subwoofer output low-pass filter slope

(normal setting).....-12 dB/octave rolloff above crossover point

The measured performance of the ICBM was superb. Noise levels were equal to or better than those I've measured for DVD-Audio and SACD players, which means that the ICBM should be transparent to such signals, and the frequency response was essentially dead flat up to the highest frequencies those media can provide. The subwoofer outputs did not overload with simulated worst-case signals from a DVD-Audio player. The high-pass crossover points measured 4 to 5 Hz higher than indicated on the front panel, but there's nothing in these numbers to cause hesitation.

— D.R.