Infinity Alpha Speaker System

The leader of the pack.

by Mark Fleischmann

Mainstream loudspeaker design is stable but stodgy. The speakers that most people buy have neither the cute form factor of sub/sat sets nor the trailblazing indulgences of cost-no-object monoliths. Most speakers are simple boxes that house off-the-shelf parts that someone with a good ear, a bit of experience, and maybe a respectable testing facility makes to sound musical—and, on a good day, neutral. So it's always a special occasion to find new materials that are deployed in interesting ways and strengthened with a heroic attempt at achieving even greater neutrality. Those are the three ways in which Infinity has broken from the pack with the new Alpha Series.

Admittedly, most of these speakers don't look unusual, despite the choice of a light-beech, medium-cherry, or black-ash-vinyl finish. Front-edge beveling is the only thing that prevents the enclosures from being totally boring rectangular solids. You could pull off the grilles, inspect the fit and finish, snoop around the plastic-nut binding posts in back, and still not find anything to write home about.

The drivers are special, though. Every Alpha driver—tweeter, midrange, and woofer—is made of Ceramic Metal Matrix Diaphragm (C.M.M.D.), a patented, trademarked material that consists of a ceramic compound that's deep-anodized into an aluminum core. It's thin and tough, so it has a low mass and a high rigidity. As with any driver material, there's a frequency at which it begins to break up and distort, but C.M.M.D.'s breakup mode is farther out of the driver's operating range than that of other materials. Using the 5.25-inch midrange as an example, C.M.M.D. reaches its breakup mode at 10,190 hertz, versus 7,449 Hz for titanium drivers or 6,700 Hz for aluminum. All other things being equal, the result is a relatively clean and extended top end combined with excellent control in the middle and lower frequencies.

Infinity originally introduced C.M.M.D. in their high-end Prelude line. Since then, it has steadily become more affordable as it has worked its way down through the Intermezzo, Entra, and Modulus Series. I once heard one of my colleagues complain that the Prelude was so neutral that he couldn't use any of our usual jargon to describe the sound. "Exactly," replied another.

If you like floorstanding speakers in the front left and right positions, you might start, as I did, with the Alpha 50 ($499). It has dual 8-inch woofers, a 5.25-inch midrange, and a 1-inch dome tweeter in a 39.4-inch-tall enclosure with a footprint of 9.8 by 13.8 inches, which I would call big but not ungainly. If you buy by the pound, the Alpha 50 weighs in at 51.7.

Infinity sent me the Alpha 37C center-channel speaker ($399), in which two 6.5-inch woofers flank a 4-inch midrange and a 1-inch tweeter. Putting a single midrange in the middle of the speaker helps prevent dialogue from being sucked into the dual-woofer-cancellation effect that often plagues horizontal center speakers. Infinity has also endowed the 37C with a locking rubber-footed rod for height adjustment, so you can aim it down or up toward the listening position. The rod also lets you set the speaker securely on a narrow set top.

The Alpha 50 and 37C have identical sensitivity ratings of 91 decibels. That's on the high side of average, so even a modestly powered receiver should be able to drive the front line to action-movie-worthy volume levels. The surround speakers have a sensitivity rating a few decibels lower.

For surrounds, I used the Alpha 20 ($399/pair), a 6.5-inch two-way bookshelf speaker. I also tried out the less-conventional

A. Mark used the two-way Alpha 20 for the side channels in his 6.1 setup.
B. The three-way Alpha 50 stands at 39.4 inches tall.
C. The 25ES is a versatile speaker that can serve different functions in a 5.1, 6.1, or 7.1 system.
D. The 37C's single-midrange design helps it avoid many of the problems that plague horizontal center channels.
E. The rear-ported 1200S sub features a 12-inch woofer and a 500-watt RMS amp.

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F. The 1200S's back panel features the Bass Optimization System controls and a switch to turn off the sub's low-pass filter if you want your processor to control the crossover.

Alpha 25ES ($349), a trapezoid-shaped surround speaker with two baffles, each containing a l-inch tweeter and 5.25-inch woofer. On one side, the tweeter is located at the top; on the other, it's at the bottom. I used a single 25ES as a rear center in a 6.1-channel system; you can also use pairs in 5.1- or 7.1-channel systems. I placed the 25ES behind the listening position, where it fired on either side of me, hitting the sidewalls near the front corners of the room.

You can set the Alpha 25ES to run as a bipole speaker, with both sets of drivers in phase (moving in and out at the same time). That's the recommended default setting for most systems and surround formats. You can also run it out of phase as a dipole speaker for THX systems. Infinity also recommends that you use the dipole setting to provide Dolby Pro Logic with a bit more diffusion. Since I had to install the speaker directly behind my sofa, very close to the back of my head, I greatly preferred the dipole setting's more-subtle effect. The Alpha 25ES also has a monopole setting, in which the drivers operate on only one side. This setting might be appropriate for corner placement, where two sets of drivers would have cancellation problems. You can also use this setting if you locate the speaker more than 14 feet from the listening position to prevent the listener from sitting in the null field. Four keyhole slots allow for secure wall-mounting.

The Alpha 1200S subwoofer combines a 12-inch front-firing C.M.M.D. driver with a flared rear port. Infinity used the conservative RMS method to arrive at the amp's 500-watt rating. The low-pass filter has a range of 50 to 150 Hz, and you can switch it off if you'd prefer your surround processor to control the crossover. What makes this sub different are the four controls for the Bass Optimization System (see sidebar).

My reference system included the Rotel RSX-1065 receiver, an Integra DPS-8.3 combi player, Monster M1.4s (biwired) and M1.2s speaker cables, and audio interconnects from *www.better-cables.com*. The receiver has 7.1 channels of surround decoding but only five channels of power, so I ran one of the receiver's rear-surround line outputs into an old Jeff Rowland Model 1 stereo amp.

Speakers that use C.M.M.D. drivers evidently require break-in. Out of the box, the speakers sounded crude and edgy. After a few days of play, they sounded almost completely different—still a bit forward, in a front-row-of-the-concert-hall sense, but much more refined. In fact, as my respect for the Alpha 50s mounted, I logged several more hours in stereo than I'd originally planned.

The Alpha 50s handled my usual array of steely sopranos without any unpleasant ringing. Moving to the opposite extreme,

A Way to Better Bass

Room acoustics routinely sabotage a subwoofer's performance. To deal with that problem, Infinity offers the Bass Optimization System with the Alpha 1200S sub. It's a glorified parametric equalizer that lets you pick your room's dominant bass frequency—the loudest peak—and use some unusual controls to fine-tune it nearly out of existence. It's similar to the Room Adaptive Bass Optimization System (R.A.B.O.S.) that Infinity uses in their higher-end models. The difference is that R.A.B.O.S. includes the kit and the controls, whereas the Alpha 1200S includes only the controls, and you have to buy the kit separately through an Infinity dealer or *www.infinitysystems.com*.

In addition to an on/off toggle, the bass optimizer includes controls for frequency, level, and width. First, use the frequency control to dial-in a center (peak) frequency between 20 and 80 hertz. Then use the level control, which affects only the frequency you just chose, to cut the peak by up to 14.1 decibels. For extra credit, you can adjust the correction's frequency width between 4.5 percent of an octave (to fix a narrow peak) and 49.5 percent (to fix a broad peak).

A brilliant pair of ears might make effective ballpark corrections with the Bass Optimization System. However, for greater precision—and significantly less time wasted in trial-and-error experiments—invest in the R.A.B.O.S. kit, which includes a test CD, a sound-level meter calibrated for low frequencies, a paper template to record measurements, and a Q-Finder device that measures the peak's width.

I got the kit and tried it out. The first step was to set my system's overall level to –10 dB, as measured by the R.A.B.O.S. meter, using the CD's pink-noise tone. Then I used a low-frequency tone to set the sub's level to 0 on Infinity's meter (which translates to 94 dB on a standard meter). Next came a series of 23 bass tones. I logged their meter readings onto the paper chart, each one plotted on two axes, by frequency (20 to 100 Hz) and level (0 to –16 dB). When I connected the dots, I found that my room (with this sub) had two peaks: one dominant, the other secondary. That information should prove to be useful in the future.

Infinity's instructions told me that the higher-frequency peak is usually the more-objectionable one. I measured its width on the paper chart by overlaying the Q-Finder, a device made from hinged sheets of thin plastic. After I found my frequency and width settings, I made a few more calculations to determine the right level adjustment. After a few twists of the sub's knobs, I was done. The process took about an hour, including lots of time out to check the manual.

I listened to the sub extensively both before and after adjustment. Post-R.A.B.O.S., its output became better proportioned, as I heard more of its full bandwidth and less of the room's dominant peak. John Paul Jones' bass in *The Song Remains the Same*, the Led Zeppelin concert movie, seemed more disciplined than I remember it sounding in the 1976 theatrical premiere. That discipline became a distinct advantage when *X-Men*'s thundering, pounding, crunching effects came galloping out of the sub.

I'm sold. R.A.B.O.S. is a great idea that really works. Bass optimization makes the Alpha 1200S sub a better performer than any other 12-incher I've heard at the popular $799 price point.

they penetrated the murk of Chris Whitley's austerely ribbon-miked *Dirt Floor* to throw a spotlight on his adenoidal voice and acoustic steel guitar. Lesser speakers turn this recording to mud. On the Who's *Live at Leeds*, the drums sounded light but effective, and I could sense Keith Moon's cymbal stands swaying under the microphones. The Alpha 50s lent fascination to certain recordings but did so without being ruthlessly revealing or abrasive. I broke the 95-dB barrier happily and often.

By the time I got to *Road to Perdition*, I wasn't surprised to hear the detailed trajectories of bullets zipping in all directions. What shocked me were the waves that washed through the soundfield during the final scene of bloodshed. It wasn't just background noise to accompany the flying lead—it felt more as though the waves were swooshing through my nervous system. Another aquatic effect that got to me was the brief rainstorm that comes about 107 minutes into *Crouching Tiger, Hidden Dragon*. A less-precise speaker system would have rendered the thousands of raindrops as a dull wash. In contrast, the C.M.M.D. drivers rendered each drop as a separate tiny event. For a split second, I thought I could smell the rain.

As with any highly detailed speaker, I wouldn't mate the Alphas with a cheap amplifier or a room that has lots of bare, reflective surfaces. There's a lot more to these speakers, though, than just the familiar dichotomy between bright/forward and mellow/laid-back. C.M.M.D. has some unique qualities. It can play loud without falling apart, yet it can whisper a clearly articulated texture. It also has a chameleon-like versatility and a penchant for conjuring new feelings from familiar recordings. Two-channel loyalists will find it to be an engaging companion.

While the Alpha Series doesn't have as huge a soundstage or all of the unnerving transparency of the higher-end Prelude and Intermezzo Series (which cost several times as much), the matched driver materials do give the Alphas an unusual degree of tonal unity for their price. They use a completely different palette to paint music and effects than similarly priced speakers with metal, plastic, or textile drivers. This is especially true in the upper midrange, which is prominent and distinctive but not detached from the rest of the sound range.

For just under three big ones, the Alpha system is full of intelligent strategies that are more than just gimmicks. C.M.M.D. is a welcome addition to my frame of reference, and I won't be happy until I've found a way to add R.A.B.O.S. (or its equivalent) to my system. Demo the Alphas with high-quality amplification; you have nothing to lose but your preconceptions.

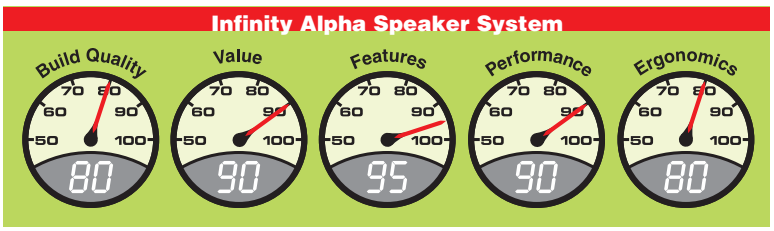
** Mark Fleischmann is the author of* Practical Home Theater, *now in its second edition, available through* www.practicalhometheater.com *(or 800/839-8640).*

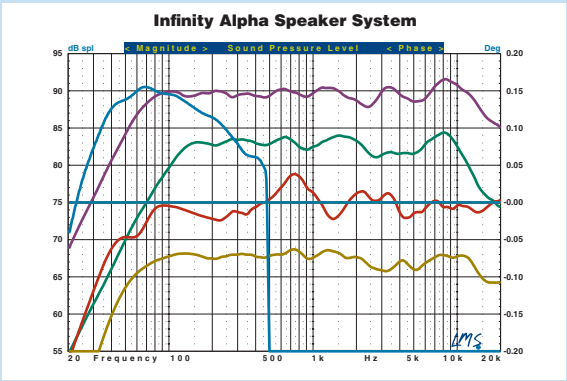
Alpha 50 Tower Speaker	**$499**
Alpha 37C Center-Channel Speaker	**$399**
Alpha 25ES Surround Speaker	**$349**
Alpha 20 Bookshelf Speaker	**$399/pair**
Alpha 1200S Subwoofer	**$799**

Infinity Systems
(800) 553-3332
www.infinitysystems.com
Dealer Locator Code IFY

HIGHLIGHTS

- **All drivers made of anodized aluminum/ceramic material**
- **Surround speaker can run bipole, dipole, or monopole**
- **Sub has parametric EQ for level, bandwidth, and frequency**





HT Labs Measures: Infinity Alpha Speaker System

This graph shows the quasi-anechoic (employing close-miking of all woofers) frequency response of the Alpha 50 L/R (purple trace), Alpha 1200S subwoofer (blue trace), Alpha 37C center channel (green trace), Alpha 25ES surround (red trace), and Alpha 20 rear channel (yellow trace). All passive loudspeakers were measured at a distance of 1 meter with a 2.83-volt input and scaled for display purposes.

The Alpha 50's listening-window response (a five-point average of axial and +/–15-degree horizontal and vertical responses) measures +1.58/–2.16 decibels from 200 hertz to 10 kilohertz. The –3dB point is at 61 Hz, and the –6dB point is at 49 Hz. Impedance reaches a minimum of 3.98 ohms at 10.5 kHz and a phase angle of –57.98 degrees at 66 Hz. Sensitivity averages 90 dB from 500 Hz to 2 kHz.

The Alpha 37C's listening-window response measures +1.36/–1.95 dB from 200 Hz to 10 kHz. An average of axial and +/–15-degree horizontal responses measures +1.80/–1.36 dB from 200 Hz to 10 kHz. The –3dB point is at 103 Hz, and the –6dB point is at 80 Hz. Impedance reaches a minimum of 3.26 ohms at 10.5 kHz and a phase angle of –66.21 degrees at 96 Hz. Sensitivity averages 90 dB from 500 Hz to 2 kHz.

The Alpha 25ES's three-face averaged response in dipole mode measures +2.74/–3.48 dB from 200 Hz to 10 kHz. The –3dB point is at 73 Hz, and the –6dB point is at 58 Hz. Impedance reaches a minimum of 2.82 ohms at 20 kHz and a phase angle of –66.13 degrees at 84 Hz. Sensitivity averages 83 dB from 500 Hz to 2 kHz.

The Alpha 20's listening-window response measures +0.74/–2.18 dB from 200 Hz to 10 kHz. The –3dB point is at 56 Hz, and the –6dB point is at 45 Hz. Impedance reaches a minimum of 4.02 ohms at 15.4 kHz and a phase angle of –48.87 degrees at 2.9 kHz. Sensitivity averages 87 dB from 500 Hz to 2 kHz.

The Alpha 1200S's close-miked response, normalized to the average level from 40 to 80 Hz, indicates that the lower –3dB point is at 37 Hz and the –6dB point is at 32 Hz. The upper –3dB point is at 190 Hz with the LP switch set to off.—*AJ*