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# HOME THEATER

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## Subwoofers

### Earthquake Sound SuperNova MKIV-12P Subwoofer

By Kevin Hunt • December, 2001

*Meaty, beaty, little, and bouncy.*

The Earthquake SuperNova could be the world's most dangerous end table. No amount of Crazy Glue will repair the heartbreak of the unwary soul who dares place the family-heirloom Tiffany lamp or Waterford vase on this compact subwoofer. This is not a New Age sub disguised as a fine piece of furniture, a veneered life-style block



that magically comes to life when The Matrix flashes across the television screen. The SuperNova MKIV-12P is a big-lipped powerhouse of a subwoofer that pretends to be nothing other than that. When this 15-inch cube busts out, its fully exposed drivers flapping in the breeze, the results are nearly seismic: more than 100 decibels at 20 hertz, the home theater nether world of deep bass.

Vibrations caused by the SuperNova can, no exaggeration, knock dishes from shelves and lightly secured wall hangings right off their hooks. Forget about using it in an apartment building. In a retirement community, it would be judged a menace to society. You've already been warned about the lamp or vase.

Even as the Sunfire-inspired bass race shifts from bigger and louder subwoofers to smaller and even-louder ones, Earthquake subs remain among the loudest and, dollar-per-decibel, among the top performers. Earthquake says the SuperNova MKIV-12P (\$1,697) plays even louder and, more significantly, faster and more coherently with music than its predecessors.

Technologically speaking, the SuperNova MKIV-12P isn't too different from Earthquake's MKII edition, but it has been reconfigured in two notable areas. The two 12-inch drivers—an active, cast-basket Magma driver and a passive SLAPS radiator—are now mounted across from, rather than adjacent to, each other. Earthquake says that this push-pull setup in a sixth-order enclosure gives the SuperNova greater output and better control. Indeed, the variable bass-boost feature found on previous models, which adds up to 6 dB at 25 Hz, has been deemed redundant and thus eliminated.

The control panel, which doubles as a chassis for the cool-running, Sunfire-esque 580-watt class D amplifier, has been shifted from the bottom panel to a side panel. Why was it ever on the bottom panel? Well, Earthquake thought that this location would make the control panel childproof, but it turned out to be adultproof, too. Although there's no obvious vent, the sub's passive radiator is considered a vented design, which typically plays louder than a sealed-enclosure design but rates higher in phase shift and group delay. Earthquake's Joseph Sahyoun, who designed the SuperNova, sought the benefits of both designs by tuning the sub to shift those distortions to an inaudible frequency. In actuality, this requires a port too big for the enclosure, so Sahyoun developed SLAPS (Symmetrically Loaded Audio Passive System), which allows for massive air movement. Earthquake says the passive radiator has a linear excursion rate of up to 4 inches. To withstand that kind of force, the big-lipped SLAPS is constructed of 1-inch-thick, thermally pressed polyether foam. The lips that rim the driver start out even thicker, pressed from 1.5-inch foam.

The passive radiator has no voice coil or magnet assembly and is weighted with a steel cylinder (the bolt protrudes from the driver) to about 17 Hz, about an octave below the resonance of a sealed sub of this size. If you want to see some major-league flapping, Sahyoun suggests sending a 15-Hz sine wave through the SuperNova. (Sorry, since most subs don't go that low, I couldn't find a test CD that even bothered to reach below 20 Hz.) Above that tuned frequency, the SuperNova has been designed to achieve a phase response similar to that of a sealed-design sub.

The Magma driver features a 3-inch (diameter) voice coil with a 1.85-inch winding length, a 7-inch (diameter) epoxy-coated super spider, and double-stacked, high-gauss magnets with a combined height of 1.5 inches.

The MKIV-12P's Millennium class D amplifier has a patented Optical Distortion Limiting circuit, an antialiasing feature that converts analog signals to light and couples them with the driver stage. Bottom line: It reduces distortion at high volume levels. The SuperNova has speaker-level inputs and outputs, but Earthquake emphatically recommends using line-level inputs with an appropriate high-quality cable and Y adapter. (A line-level 100-Hz high-pass output is also available.) The control panel also contains the volume control, a 24-dB/octave low-pass filter continuously variable from 50 to 150 Hz, a phase switch (0 and 180 degrees), an auto/off switch, an always-on red-LED power indicator, and a detachable IEC power cable. You can also control the volume, somewhat noisily, via the remote, which activates a tiny optical sensor that's attached to the SuperNova by a thin cord.



Article Continues: [Page 2](#) »

## Company Info

**Earthquake Sound**  
Web Site

**SuperNova MKIV-12P Subwoofer**  
**\$1,697**  
**Dealer Locator Code EAR**

**(800) 576-7944**

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