

“...very smooth...very flat...

very clean and

DYNAMIC ...”

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**audio
 ideas
 guide**

“The excellent dispersion of all models makes listening well off-axis, especially with a centre channel, little problem, with good stereo and surround imaging always apparent.”

by Andrew Marshall

The New Titan
(Improved over version reviewed for even better sound.)



This Canadian company has taken a mix-and-match approach to home theatre. Though suggesting Titans up front, with Atoms at rear, either compact speaker can be used in fours with the subwoofer and centre channel speaker. In fact there are two centre channel models, the smaller CC-100 intended to match with the Atom. I would suggest using each satellite speaker model in fours with subwoofer and centre channel.

All were finished in black woodgrain vinyl as supplied, but Paradigm was showing all in a glossy woodgrain finish that is very attractive at the Chicago CES in June. This will be available at slightly higher cost.

The Titan measurements show an amazingly linear speaker for its price even in the quasi-anechoic curve at top, with the tweeter resonance seen at about 19 kHz. This trace is notably free of the spikiness seen in many loudspeakers.

The room curves below show very smooth response at 0 and 15° through the midrange, with a slight rise above 10 kHz, and a little roughness below the 2 kHz crossover point from the woofer surround. Even at 30° off-axis, the tweeter is very linear, and at 60° exceptional dispersion is seen up to 16 kHz.

Bass nearfield measurements of woofer and port are spliced to the 1-metre curves at 650 Hz, and show a rise between 100 and 200 Hz, but with excellent shelved response right down to 30 Hz. Room boundaries can be used to extend deep bass, and mounting in a wall unit should be an ideal situation for this rear-ported speaker, if there is space for the rear wave to emerge.

The impedance measurements show that the woofer and port are tuned quite far apart, the port peak reaching about 27 ohms at 25 Hz, and the woofer one at 90 Hz being about 40 ohms. Otherwise, low frequency impedance is about 5 ohms, rising to a high 60 ohms at the 2 kHz crossover point, declining to about 10 ohms at high frequencies. The spike at the upper end of both impedance and phase traces indicate the tweeter resonance.

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The electrical phase measurement shows a 90° swing through midrange and upper frequencies, suggesting that the woofer is connected in opposite polarity to compensate for crossover phase variations. However, the very flat frequency responses indicate that acoustic phase is quite accurate, the drivers' combined response having no discernible cancellations.



The New ATOM
(Improved over version reviewed for even better sound.)

"... very smooth response at 0 and 15° through the midrange ... at 60° exceptional dispersion is seen up to 16 kHz ... excellent shelved response right down to 30 Hz."

The Atom also measured quite well for a speaker at a rock-bottom price, its midrange dip resembling that seen on some other Paradigm models. The response traces at 0 and 15° are virtually identical, that at 30° just a bit smoother at the very top of the range. This is excellent dispersion, and used in a home theatre system the Atom will provide even frequency distribution over a wide listening radius.

"... the very flat frequency responses indicate that acoustic phase is quite accurate ..."

However, it is also a little peaky around 1 kHz, and though this might improve dialog articulation, it will also be heard with music as a slightly forward character.

Where the Atom shows its diminutive size sonically is in the bottom octaves, where response rolls off quite quickly below 60 Hz. As can be seen, the subwoofer extends response to 40 Hz, but more on this below.

Impedance measurements of the Atom show a nominal value of about 5 ohms in the bass region, with port and woofer peaks at 25 and 35 Hz, respectively. Just over 40 ohms at the 2.5 kHz cross-over point, it settles to 10 ohms at high frequencies.

Phase is similar to that of the Titan, ranging over 90° in the treble region, and showing some complex effects in the bass region which are of little acoustic significance.

"The Atom also measured quite well for a speaker at a rock-bottom price ... used in a home theatre system the Atom will provide even frequency distribution over a wide listening radius."

The CC-200 centre channel speaker has quite similar response characteristics to the Atom, but its bass from the front-ported quite large box is more extended, like that of the Titan. A little rough in the lower midrange, its response above is very linear and well dispersed on all axes. With a pair of woofers flanking the central tweeter, it will have excellent extension on Mono sources, and when used with 4 Titans is quite impressive even without the subwoofer.

"The CC-200 centre channel speaker has quite similar response characteristics to the Atom, but its bass from the front-ported quite large box is more extended, like that of the Titan. ... very linear and well dispersed on all axes ... when used with 4 Titans is quite impressive even without the subwoofer."

The matching subwoofer uses a pair of internally mounted 8" woofers in a ported box, with 4 sets of spring-load connectors for input and high-pass-filtered output to the satellites. Quite large, it is less invisible than some, but could be used as a coffee table to rattle your cups. If size is not a concern, you can use these subs in pairs, and full connection diagrams are provided in the instruction sheet, as well as those for bi-amp operation.

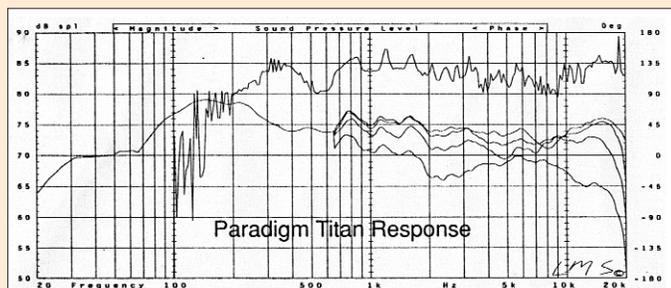
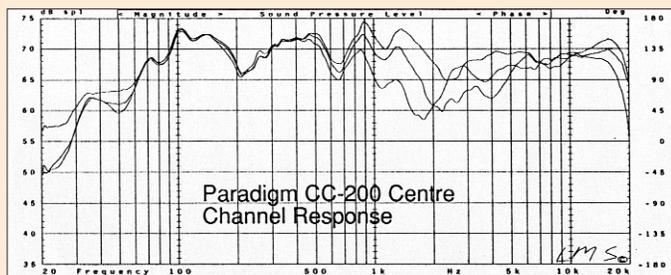
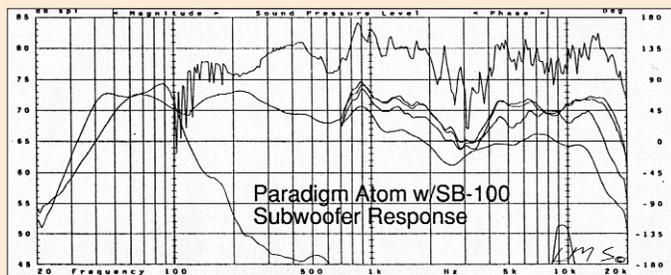
The SB-100 subwoofer operates over a quite



The New CC-200
(Improved over version reviewed for even better sound.)

narrow range, as its measurement on the Atom chart shows. Its response kicks in just below 100 Hz, and rolls off below 40 Hz; extension into the 30 Hz range can be achieved with judicious placement. Its response has been carefully tailored to work well with both satellite models, and it is a good addition in both pure audio and home theatre systems based around either speaker. The contribution of solid, clean, high-level bass is only hinted at in the measurements; the Titan in particular, can go quite deep, but not at the kind of volume the sub can achieve.

I found the sound of both Titan- and Atom-based systems very clean and dynamic, the smoothness and extension of the former obviously preferred as a more expensive option. The excellent dispersion of all models makes listening well off-axis, especially with a centre channel, little problem, with good stereo and surround imaging always apparent.



The New SB-100

(Improved over version reviewed for even better sound.)