

LCR-350, CC-350, ADP-350, PW-2200

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"THE BAR HAS JUST BEEN RAISED."



essentially a bipolar sub, and the PW-2500 (21 1/4"H x 19"W x 24"D) is bigger, housing a similarly configured 15" driver. Both woofers have the company's new very rigid cast aluminum baskets, these vented for extra airflow to keep them cool under fire, so to speak. The fire is provided by a 250 watt rms amplifier.

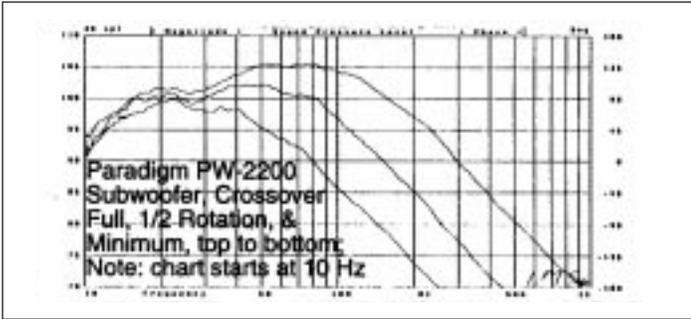
"smooth uncoloured frequency response, excellent dynamics, and superb timbral matching in all channels.. very articulate"

To call this home theatre speaker system a middle-market approach to the genre may seem a little out of line, but you can pay much more than this for 5.1 speakers (and to call a subwoofer ".1" speaker when it's often bigger than all the others combined, seems to me more than a little absurd...but audio thrives on absurdities, doesn't it?). The PW-2200 is not actually a part of the 350 system, but a logical mate, one of a pair of new subs ranked just below the Servo 15 in the Paradigm line. It has a 12" woofer, and is rear ported, making it

The 350 speakers all use the same drivers in varying configurations, the LCR and CC employing the pure titanium dome tweeter and two 6 1/2" injection moulded co-polymer polypropylene bass/midrange drivers, also with cast aluminum baskets, in D'Appolito configuration. The drivers are all manufactured in house by Paradigm. The CC-350 could be replaced with another

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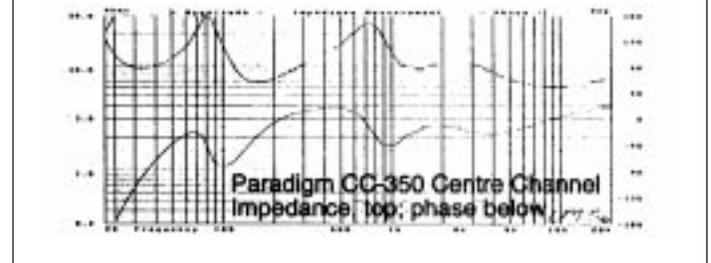
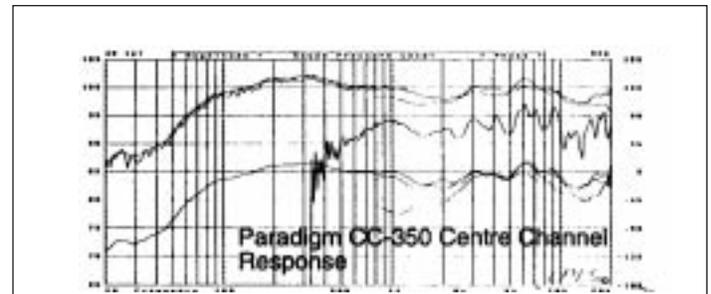
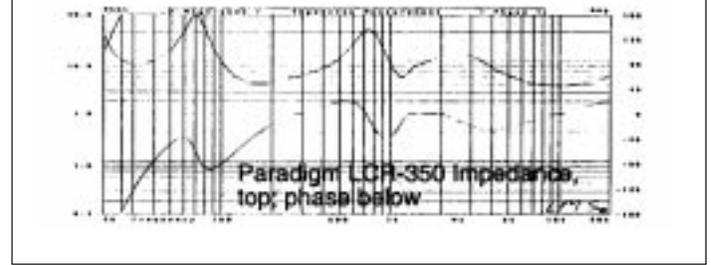
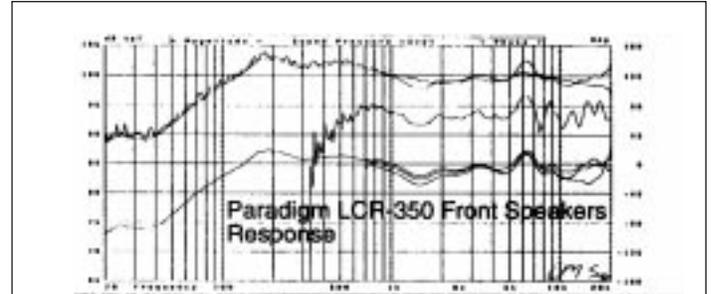
ANDREW MARSHALL



LCR-350 for marginally better bass reach, but the slightly slimmer profile of the former might be advantageous in some setups. The ADP-350 is a dipole design with the company's smooth transition to bipolar deep bass built into the crossover. This means they use two of each driver, hence the higher price. Available finishes are black ash and black graphite vinyl. It's a Model T Ford approach: you can have it in any colour, as long as it's black. However, you can really gild the lily with the sub, with light cherry, dark cherry, and black ash finishes available. Actually, I lied about black being the only 350 finish; you can special order the surround ADP model only in white vinyl.

"±1-1/2 dB between 16 and 80 Hz; this baby is smooth and flat... this sub was easily capable of an ultra clean 105 dB or more even below 20 Hz. It not only kicks butt, it kicks bottom."

I lived with this system for several months, using it with the various surround receivers and amplifiers reviewed in this issue. Most of my listening was done before actual measurements, the reverse of our normal process, and that's a good thing (Martha Stewart's in town this week), at least, sometimes. I experienced the system's smooth uncoloured frequency response, excellent dynamics, and superb timbral matching in all channels. The overall character was very articulate, with a little more upper midrange energy than our reference ribbons from Newform Research. Integration with the PW-2200 was seamless, and I preferred to set the crossover quite low, down in the 40-50-Hz region, which made the sub seem to disappear, though deep bass definitely did not. This sub kicks butt! The PW-2200 has an authority reminiscent of the mighty Servo 15, and, being essentially bipolar, is relatively placement insensitive. I always like



to have the subwoofer a foot or more in front of the left and right speakers for reasons of phase: the deep bass is always a little behind the higher frequencies in time, and the only way to catch up is to set it up this way. This is why it is not the best approach to put subwoofers in corners; like a wayward child, they will always call attention to themselves by being tardy.

Having said all that, let's look at our family of measurements, starting with the subwoofer, which has become our home theatre reference after 6 months in the system. The curves pretty much show why. The top one is with the internal crossover's low-pass control set wide open, which makes it able to be used with

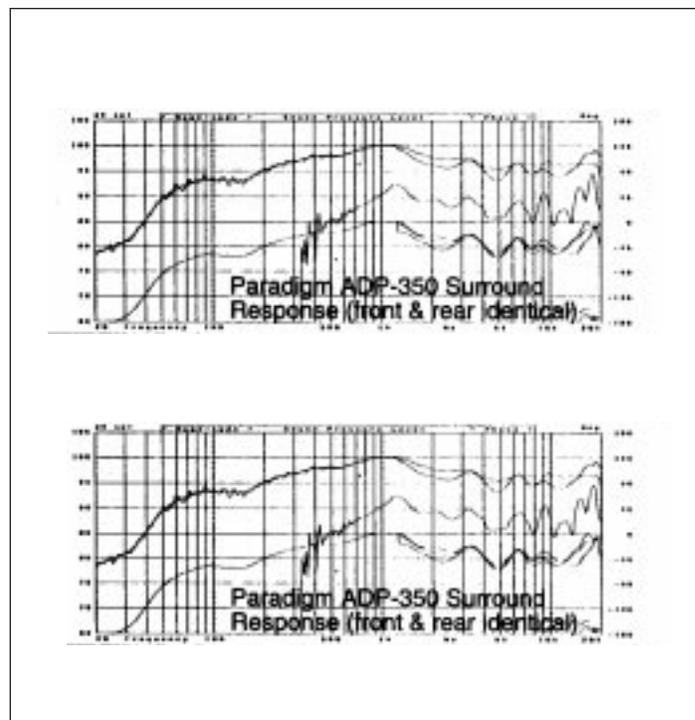
satellites that only reach down to about 200 Hz. Between 150 and about 16 Hz, this sub is ± 3 dB in our nearfield pink noise measurement (note that the bottom of the scale starts at 10 Hz, not the normal 20 used for full-range speakers). With the crossover set at mid-point in its rotation, we see a truly remarkable $\pm 1 \frac{1}{2}$ dB between 16 and 80 Hz; this baby is smooth and flat. At minimum setting (I chose to listen to it at about $\frac{1}{3}$ rotation) the sub is also very smooth to about 40 Hz. And the numbers don't lie on the graph's left side: this sub was easily capable of an ultra clean 105 dB or more even below 20 Hz. It not only kicks butt, it kicks bottom.

Looking at the 350 series measurements we can see the close familial resemblances, especially between the similarly configured LCR and CC models. Both have that little 6-7 kHz blip, smooth quasi-anechoic response on axis, and very closely grouped axial curves at 0, 15, and 30°. The LCRs have a little more mid-bass energy, but only by a dB or so. The only real difference is that because the CC was measured on its side (the way it's meant to be used), more driver lobing could be seen in the 30° curve around 1 kHz; this cancellation also helps control the vertical radiation of the LCR pair, but in the CC-350 could cause some minor attenuation in the dialogue track at couch ends, just where you don't need it. This is the eternal dilemma of D'Appolito centre channel speakers.

“good engineering has been accompanied by good voicing in the Paradigm sound rooms to optimize the timbral matching of this system.”

Impedance curves on both speakers are very similar, the load presented quite easy, even for a receiver, never getting below 6 ohms, and with mid-bass and midrange peaks around 30 and 20 ohms, respectively. The electrical phase curves derived from these show something of a phase dip around 1 kHz, but this negative angle should not cause any amplifier problems.

Turning to the ADP-350, we see a little less bass energy, and a little more treble rolloff, but a strong timbral resemblance to the front speakers. Since the surrounds will most often be closer to



the listener, and wall mounted (they come with brackets) these variances are desirable, and will most likely be compensated for by wall reinforcement in the bass, and the closer proximity bringing up the treble level a dB or so at the ear.

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In other words, good engineering has been accompanied by good voicing in the Paradigm sound rooms to optimize the timbral matching of this system. The impedance and electrical phase curves for the ADP are even smoother, this probably a result of having the extra tweeter to balance the two woofer/midranges. And, looking again at the bass measurements, it can be seen that

it shelves at 150 Hz, and extends lower than that of the other two speakers, down 10 dB at 50 Hz; 150 Hz is most likely the point at which it flips from dipolar to bipolar operation.

Having already pretty much said my piece about the sound quality of this system, which is very high for its price, I guess all I need do is try to differentiate this system from some less expensive ones. You can spend \$500 to \$1500 for one of the home-theatre-in-a-box systems out there, and be very happy.

But what you probably won't get is the 350 system's wide, smooth frequency response, close timbral matching, and, most of all, its considerable dynamic capability, especially when matched with the PW-2200. In large or small rooms, the Paradigm 350 speakers offer a level of absolute fidelity with music or soundtracks that would be hard for other manufacturers to rival or surpass even at a much higher price. In the area of entry-level high end home theatre, the bar has just been raised.