

Paradigm Reference Signature S8v2, C5v2, ADP3v2 Speakers and Signature Servo Subwoofer



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Introduction

I could say that I have been a Paradigm speaker fan for years, but there are probably hundreds of thousands of consumers who could say the same thing. Paradigm is a company that simply makes some of the best speakers in the world, sells them at a very competitive price, and has been doing it for a long, long time.

Paradigm, like other big speaker companies, has several lines, including Cinema, Monitor, Millenia, Studio, and Signature.

The Reference Signatures have just been updated to v2 (version 2), and we report here on the S8v2 floor-standers, C5v2 center channel, ADP3v2 surrounds, and Servo subwoofer.

Specifications

- **Reference Signature S8v2 Floor-standing Speakers**
- Design: 3-Way
- Drivers: One 1" Beryllium Tweeter, One 7" Cobalt-infused Aluminum Midrange, For 7" Polypropylene Woofers
- MFR: 42 Hz – 45 kHz, ± 2 dB
- Sensitivity: 92 dB/W/M
- Nominal Impedance: 8 Ohms
- Crossover Frequencies: 250 Hz, 1.9 kHz
- Power Range: 15 – 500 Watts
- Dimensions: 48.5" H x 8.25" W x 20.5" D
- Weight: 100 Pounds/Each

- Finishes: Cherry, Natural Birdseye Maple, Piano Black
- MSRP: \$3,899/Each USA
- **Reference Signature C5v2 Center Channel Speaker**
- Design: 3-1/2-Way
- Drivers: One 1" Beryllium Tweeter, Two 1.5" Aluminum Mid-tweeters, Two 4" Cobalt-infused Aluminum Midrange, Two 7" Polypropylene Woofers
- MFR: 50 Hz – 45 kHz ± 2 dB
- Sensitivity: 92 dB/W/M
- Nominal Impedance: 8 Ohms
- Crossover Frequencies: 350 Hz, 2 kHz
- Power Range: 15 – 500 Watts
- Dimensions: 9.5" H x 37.5" W x 17.5" D
- Weight: 81 Pounds
- Finishes: Cherry, Natural Birdseye Maple, Piano Black – Optional Speaker Stands J-18C
- MSRP: \$3,799 USA
- **Reference Signature ADP3v2 Surround Speakers**
- Design: 3-Way
- Drivers: Two 1" Beryllium Tweeters, Two 4" Cobalt-infused Aluminum Midrange, One 8" Polypropylene Woofer
- MFR: 82 Hz – 45 kHz ± 2 dB
- Sensitivity: 89 dB/W/M
- Nominal Impedance: 8 Ohms
- Crossover Frequencies: 250 Hz, 1.8 kHz
- Power Range: 15 – 250 Watts
- Dimensions: 13.25" H x 14.2" W x 7.5" D
- Weight: 26 Pounds/Each
- Finishes: Cherry, Natural Birdseye Maple, Piano Black – Optional Speaker Stands J-29
- MSRP: \$1,799/Each USA
- **Reference Signature Servo-Subwoofer**
- Design: Sealed Enclosure
- Drivers: 15" Polypropylene
- Amplifier: 1,500 Watts RMS
- MFR: 20 Hz – 150 Hz ± 3 dB
- Crossover: Variable 35 Hz – 150 Hz
- Contour: 0 – 6 dB at 60 Hz Variable
- Inputs: RCA and XLR
- Dimensions: 19.25" H x 18" W x 20.9" D
- Weight: 114 Pounds
- Finishes: Cherry, Natural Birdseye Maple, Piano Black
- MSRP: \$3,799 USA
- [Paradigm](#)

The Design

In the v2s, the differences are that the tweeter is now made from beryllium instead of titanium. Beryllium is a very light metal, but it is brittle and hard to work with. It is also toxic. So, beryllium tweeters have been a long time in arriving, but they are finally here. The result is lower distortion because the tweeter dome is so light weight, yet very strong.

Secondly, the midrange cone material is now cobalt-infused aluminum. Basically, this means it is an alloy. This makes the cone stiffer so that it does not flex during movement when reproducing the music.



Other than these two things, the Signatures are the same as before. They come in a variety of finishes, and the review samples were Piano Black. My wife was taken with them immediately as being very beautiful.

The ADP3v2s are dipole surround speakers that are meant to be hung on the wall, using the mounting hardware that comes with the speakers, but you can also just place them on a shelf or the optional J-29 speaker stands.

Speaker binding posts are set up for bi-wiring or bi-amping and are solidly constructed.



The Servo subwoofer uses a 15" driver with a servo device mounted on the cone, and is driven by a 1,500 watt switching (Class D) power amplifier. The amplifier has Auto On/Off, Trigger, XLR as well as RCA input, Phase Alignment, Low-Pass (35 Hz – 150 Hz), Bass Contour (up to + 6 dB at 60 Hz), and the Volume Control. The AC socket is non-grounded.



In Use

I set the Paradigm system up in our home theater lab, with Denon players (one for SACD and one for Blu-ray movies), Denon AVP-A1HDCI SSP, and ClassÃ© CA-5200 power amplifier. Cables were Nordost.

I toed the S8s in slightly, the C5 on a stand in the middle, and put the ADP3s on shelves in the rear of the room. There were no shelves above the ADP3 speakers, and the shelves were about head-height.

I watched a number of movies using the Paradigm system and also listened to a lot of SACDs, such as those shown below. I was rewarded with some of the most breathtaking surround sound I have yet heard. It is great to finally have high resolution movie sound tracks, such as DTS-HD Master Audio and Dolby TrueHD, because speakers like these Paradigms thrive on high rez.

I cranked up the movies to say the least, and the Reference Signature v2 speakers can take any sound level you want to have it throw at you. Crystal clear, no chestiness, no boominess, no nasality, and no over-sibilance. I did configure them with the Audyssey Room Correction in the Denon AVP-A1HDCI, but most of the time, I just listened with Audyssey turned off. Frankly, the speakers sounded very neutral even with no room correction.

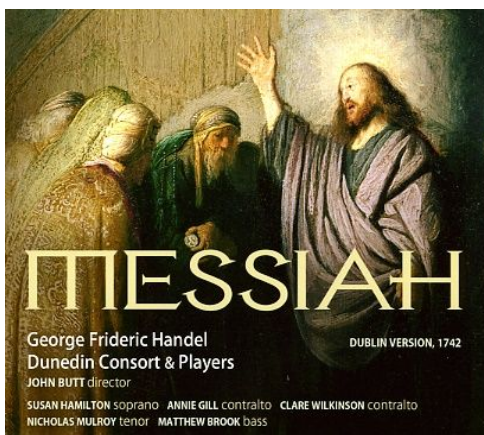
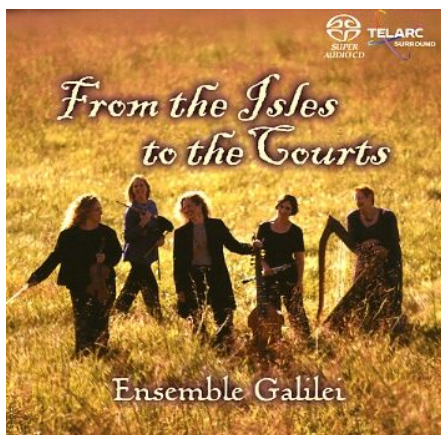
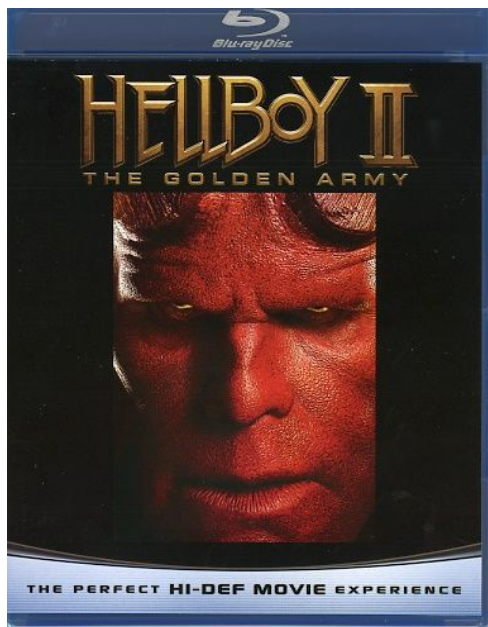
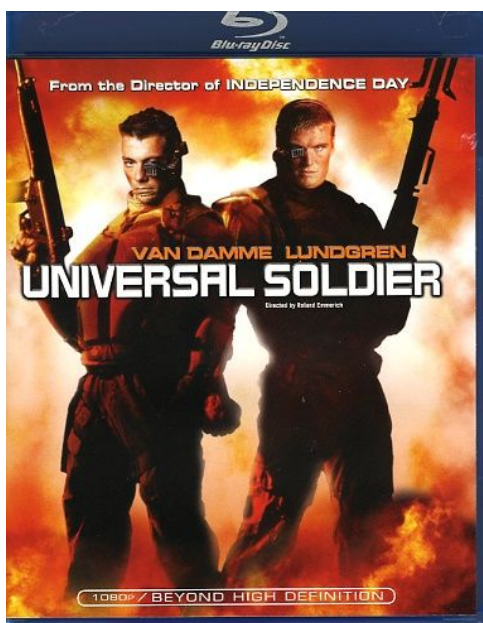
When watching action movies, the sound was never strained, and when listening to chamber music, each instrument came through with all of its delicate overtones.

The C5v2 is the largest center channel speaker I have had in the lab, and the payoff is delivery of sound that has tremendous weight and depth. Transition of sound that moved across the sound stage was smooth, no obvious change when the sound hit the center channel vs. the left or right front during the sound panning.

The ADP3v2s in the rear are something that your ears have to behold to believe. In fact, they are so good, I ran a little experiment. The S8s were about eight feet apart, so I placed the two ADP3s about three feet apart in the middle and played some two-channel SACD music. The ADP3s were good enough to use as front speakers, and the sound stage was absolutely huge. It sounded like the music was still coming from the farther apart S8s. For those of you who have small rooms, you might consider using a pair of these in the front instead of large direct radiating speakers. You will end up with a sound stage much larger than you can imagine. Of course, the subwoofer would still be required.

Speaking of subwoofers, the Paradigm Servo Sub produced amazing bass. The servo consists of a solid state accelerometer chip that is attached to the voice coil. It senses the movement of the cone and feeds electrical signals back to the power amplifier. The difference between what the power amplifier originally sent to the woofer driver and how the driver actually moved (the distortion) is inverted and fed back into the power amplifier circuit, cancelling the distorted movement.

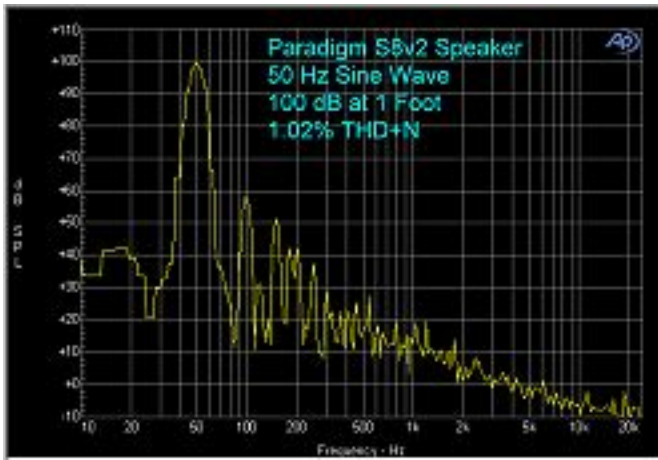
Anyway, the Servo Sub is powerful enough to deliver any action sequence from any movie that I know of, but also of low enough distortion that it will play music without noticeable distortion that might otherwise ruin the musical experience.



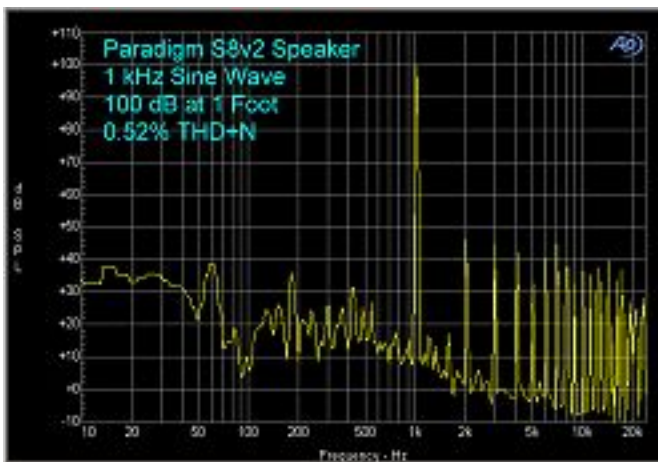
On the Bench

Let's start with the S8v2.

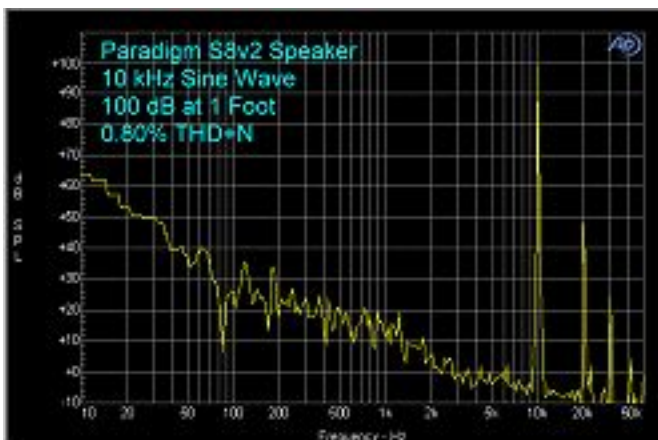
At 50 Hz and 100 dB (measured midway between all the woofers), THD+N was a very low 1%.



At 1 kHz, distortion (from the midrange driver) was 0.52%. Again, this is a very low number.

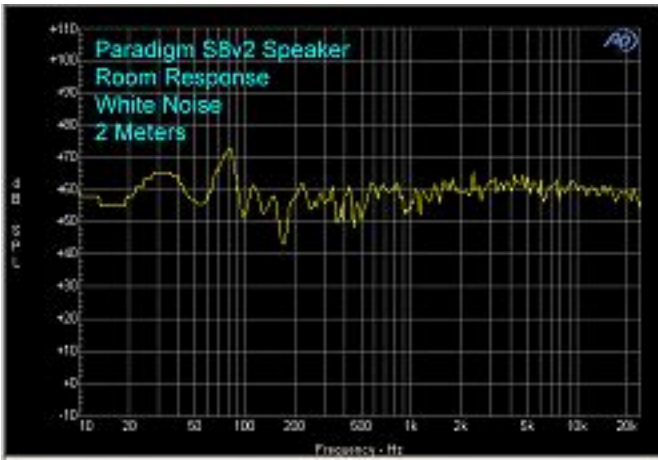


And at 10 kHz (measured from the tweeter), THD+N was 0.8%.

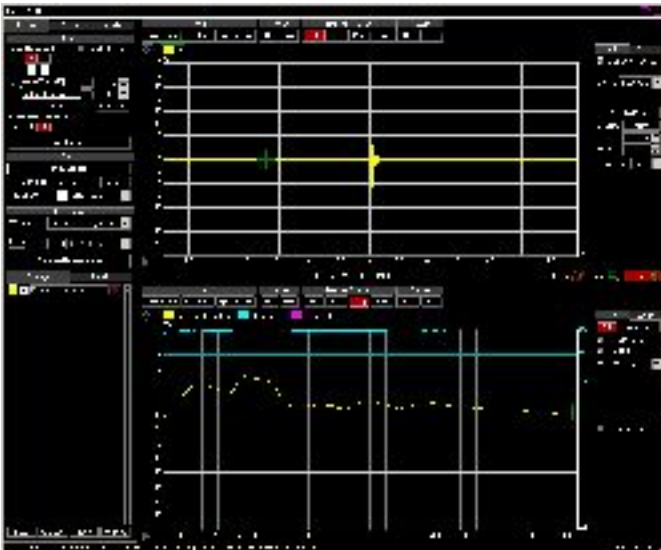


For THD+N vs. Frequency, distortion stayed at about 1% or less from 30 Hz to 20 kHz. This is truly incredible performance.

Here is the room response curve, using averaged white noise, at 2 meters. The response is generally flat, with some peaks and valleys due to room modes.



To test the off-axis response, I used impulse response analysis. The first graph shown below is the response directly on-axis. The second photo is the response at 30° off-axis. Notice that from about 2 kHz on up, there is attenuated response. This is normal performance for a speaker at off-axis listening positions. (If you click on the photo and it does not completely expand to full size, click on the small square in the bottom right corner to further expand the size.)

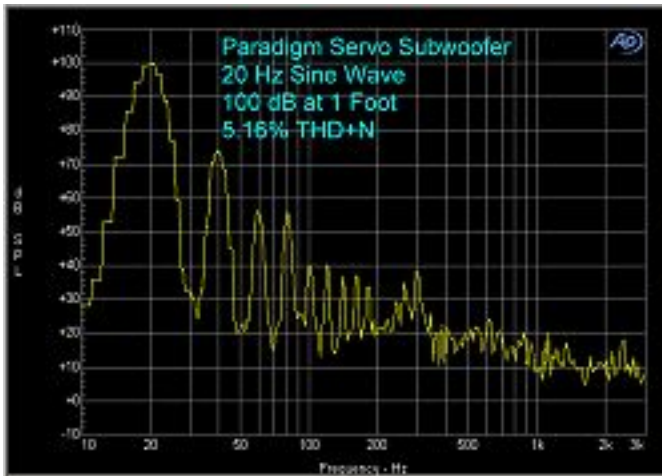


The impedance of the S8v2 appears to be nominally 8 ohms. Electrical phase stays within $\pm 60^\circ$.



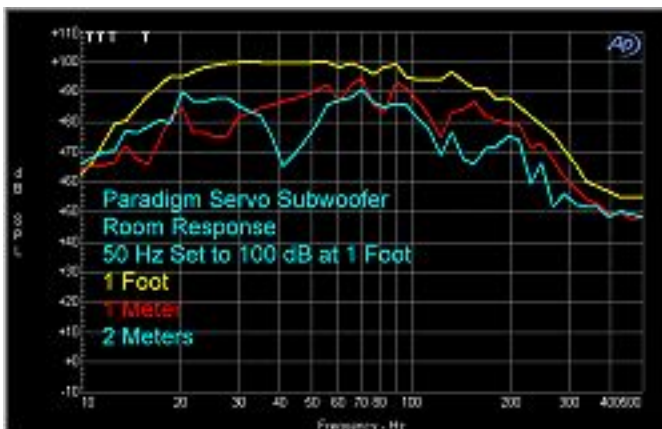
Now to the Servo-Sub.

At 20 Hz, 100 dB, and 1 foot, THD+N was 5.16%. Excellent.



THD+N vs. Frequency indicated that distortion stayed at 5% or below from 15 Hz to 200 Hz.

Here is the room response graph. The yellow line is essentially the sub's response, while the red (1 meter) and blue (2 meters) lines indicate more and more of the room's effects.



Paradigm tests all their speaker designs in an anechoic chamber. Here is Mark Aling, Paradigm's Marketing Manager, giving me a tour of one of their three chambers. Click on Mark's photo to download the video (a Windows Media Player file, *.wmv), which is in full high def, 1,920×1,080.



Conclusions

The Paradigm Reference Signature S8v2, C5v2, ADP3v2, and Servo-Sub represent state of the art in a surround sound speaker package. Although it may seem expensive, when you take a look at the incredible build quality, the number of drivers (including beryllium tweeters), and the amazing sound, you can call this system an investment opportunity.