

# Test Bench

## Paradigm MilleniaOne Speaker System

**PRICE:** \$2,648 **AT A GLANCE:** Die-cast aluminum satellites • Flat-form-factor subwoofer • Remarkable transparency

# Heavy Metal Maestro



**N**ot often do I begin a review with an apology to readers. But I owe you one. It's taken me an unconscionably long time to get around to reviewing the Paradigm MilleniaOne satellite speaker system and MilleniaSub. The products made their retail debuts in November 2010. Since then they've languished on my to-do list despite the fact that Paradigm is one of my favorite speaker manufacturers. In fact, I never fail to cite my reference speakers, the Paradigm Reference Studio 20 v.4, in every A/V receiver review. Now that I've gotten an earful of the MilleniaOne and MilleniaSub, I'm kicking myself. I should have recommended these stellar satellites and innovative subwoofer to you a whole lot sooner, whether you're in the market for a sat/sub set or not. This is the kind of high-performance sat/sub set that might make believers out of people who weren't even interested in the product category to begin with.

### Separate Checks

In this instance I'm applying the term *sat/sub set* loosely. Unlike most sat/sub sets, the MilleniaOne and MilleniaSub are sold separately from each other, for \$1,249 and \$1,399, respectively. This was a pragmatic move given the subwoofer's price—it costs more than the satellites. You could pick a more conventional and less costly subwoofer from Paradigm or another manufacturer among our Top Picks at HomeTheater.com (see Compact Speakers as well as Subwoofers). While that would deprive you of the MilleniaSub's numerous unconventional advantages, it could

shave several hundred bucks off the system cost.

The MilleniaOne satellites come in heavy die-cast aluminum enclosures that are more acoustically inert than most, always a good thing because it avoids reradiation of sound-polluting resonances. With their high-gloss black or white finish, they look fantastic. You'll also find

Paradigm MilleniaOne Speaker System  
**PERFORMANCE** ★★★★★  
**BUILD QUALITY** ★★★★★  
**VALUE** ★★★★★

equally heavy metal pedestals as well as wall-mounting hardware in the box.

The two-way satellite includes a 1-inch tweeter,

• The MilleniaSub stands upright and measures just 5.5 inches thick.



## SPECS

SPEAKER:	MILLENIAONE
TYPE:	Satellite
TWEETER (SIZE IN INCHES, TYPE):	1, S-PAL aluminum
BASS/MIDRANGE DRIVER (SIZE IN INCHES, TYPE):	4, S-PAL aluminum
NOMINAL IMPEDANCE (OHMS):	8
RECOMMENDED AMP POWER (WATTS):	15-100
AVAILABLE FINISHES:	Gloss Black, Gloss White
DIMENSIONS (W X H X D, INCHES):	4.5 x 7.75 x 4.75
WEIGHT (POUNDS):	5.4
PRICE:	\$1,249/system

protected from little fingers by a mesh barrier, and a 4-inch bass/midrange driver, both made of S-PAL, the satin-anodized pure aluminum that figures in many Paradigm products. The woofer surround overlaps the tweeter waveguide slightly, allowing them to sit closer together and blend, more like a single point source. The center speaker is identical to the

satellite—no extra woofer—except for the badge on the longer dimension of the grille and a pedestal designed for horizontal placement. I used it that way because the pedestal left no other choice. Even with horizontal placement, the center had no trouble matching timbre with the vertically placed left and right speakers, as my level-balancing test tones verified.

A heavy rubber strip surrounds the baffle, presumably to keep the magnetically attached perforated metal grille from rattling. Speaker terminals are all-metal cylindrical spring-loaded wire clips, the kind of wire clips I *don't* frown on. In the way they bite down on cable tips, they function as wire clips, but in terms of their shape, sturdiness, and area of surface contact, they're more like binding posts. Cable access is slightly restricted by recessed channels leading to the side holes in the terminals. This made it hard to fit the nude tips of my Monster THX ribbon cables into the terminals, but those are fat 12-gauge cables with copper strands wrapped around a plastic core. Ordinary 12- to 16-gauge zip cord would be an easy fit.

The MilleniaSub is the size and shape of a large briefcase with its smallest dimension just 5.5 inches thick. This flat-form-factor sub provides for a cornucopia of placement options—push it under a table, stand it on end next to your equipment rack, or mount it on the wall. On either side of its curved extruded aluminum enclosure are two racetrack-

shaped drivers, measuring 14 by 3 inches, which are configured to cancel vibration and provide more disciplined performance. For the rigors of high excursion, the reinforced polymer-coned drivers have a tough outer skin and a corrugated surround made of Santoprene, a compound in which rubber particles are dispersed in a thermoplastic matrix. Energy-efficient Class D amps provide 300 watts of steady-state power and up to 900 at peak moments.

A couple of strategically chosen accessories would enhance the performance and convenience of the MilleniaSub. Paradigm's Perfect Bass Kit (PBK-1) allows you to tune the sub for your room using a supplied microphone, tripod, and computer software. Just use the supplied CD-R to install the software on your computer, then link the computer to both the mike and the sub with supplied USB cables. The system will spit out test tones, analyzing up to 10 listening positions and adjusting the bass accordingly. This is a more exacting process than the room correction used in many A/V receivers—Paradigm actually measures the individual characteristics of each microphone and includes the mike profile on the CD-R. Although the PBK-1 has changed since the last time I saw it, with an adjustable plastic tripod replacing the metal one, the price is still \$99.

A new subwoofer accessory (to me, at least) is the PT-2 wireless transmitter (\$149). It uses the 2.4-gigahertz band to transmit signals to up to four subwoofers. Range is up to 50 feet barring obstructions. No receiver box is provided—that function is already built into the MilleniaSub. Setup was easy. I plugged the cable leading from my A/V receiver's line-level sub output into the transmitter (it also has speaker-level binding posts) and plugged the transmitter's wall wart into an outlet. Then I held down the front-panel button for three seconds. Within less than a minute, the indicator stopped winking and glowed steadily, after which the sub operated as though the cable had been plugged directly into it. The advantage of a wireless sub connection is that it affords even greater versatility in placing the flat sub in whatever is

● The MilleniaOne's woofer surround slightly overlaps the tweeter's waveguide.



# MIDRANGE PARADIGM MILLENIAONE SPEAKER SYSTEM

## HT Labs Measures

### PARADIGM MILLENIAONE SPEAKER SYSTEM

#### Satellite Sensitivity:

87 dB from 500 Hz to 2 kHz

This graph shows the quasi-anechoic (employing close-miking of all woofers) frequency response of the MilleniaOne satellite (purple trace) and Millenia Sub subwoofer (blue trace). The passive loudspeaker was measured with grille at a distance of 1 meter with a 2.83-volt input.

The MilleniaOne's listening-window response (a five-point average of axial

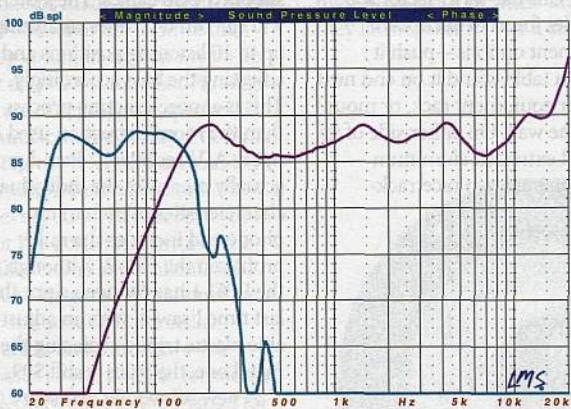
and +/-15-degree horizontal and vertical responses) measures +2.15/-1.46 decibels from 200 hertz to 10 kilohertz. An average of axial and +/-15-degree horizontal responses in horizontal center mode measures +1.90/-2.10 dB from 200 Hz to 10 kHz. The -3-dB point is at 124 Hz, and the -6-dB point is at 107 Hz. Impedance reaches a minimum of 4.51 ohms at 277 Hz and a phase angle of -60.56 degrees at 162 Hz.

Visit our Website for a detailed explanation of our testing regimen, plus a list of our reference gear.

on the web

The Millenia Sub's close-miked response, normalized to the level at 80 Hz, indicates that the lower -3-dB point is at 26 Hz and the -6-dB point is at 24 Hz. The upper -3-dB point is at 156 Hz with the Cut-Off Frequency control set to maximum. —MJP

### PARADIGM MILLENIAONE SPEAKER SYSTEM



the least intrusive (and/or best-sounding) location.

Associated equipment included a Pioneer Elite VSX-53 A/V receiver, Oppo BDP-83SE universal disc player, Micro Seiki BL-51 turntable, Shure M97xE phono cartridge, and Onix OA 21s integrated amp serving as phono preamp. All movie demos were on Blu-ray Disc.

#### Defiance

The MilleniaOnes defied the stereotype of compact satellite speakers as unambitious performers cowed by their larger siblings. True, like any satellites, they needed bass reinforcement from a subwoofer. But there were no obvious compromises in any other aspect of performance. Imaging was extraordinary: These

speakers could produce a seamless soundfield in 5.1 channels and, the harder trick, a convincing soundstage in 2.1 channels. Off-axis listening gave up only a little of this seemingly miraculous mastery. These speakers could depict objects in space better off axis than most speakers can on axis. Midrange was on the revealing side, though it was richly detailed and voluptuous, not merely thin or hard. And the top end was up there with the best—not just the best satellites, but the best speakers, period.

The detailed and refined top end became immediately apparent with *Safe House*, a spy thriller with Denzel Washington and Ryan Reynolds that mixes a too-modest amount of nonethe-



less gripping psychological depth with loads of noisy action scenes. When the latter ultimately persuaded me to lower the master volume just a tad, it wasn't because the speakers were harshing out—there was just more upper-midrange and high-

frequency information in the lusty car-chase scenes than my ears could tolerate. The needed adjustment didn't prevent every word of the script, sotto voce or otherwise, from subsequently reaching my ears. I also fiddled with the sub volume, raising it via both the receiver's surround processor and the sub's volume control, to better accommodate my sub placement (side-firing, 3 feet from the front wall, nowhere near the side walls). And I fine-tuned the sub crossover to

## SPECS MILLENIASUB

### SUBWOOFER ENCLOSURE TYPE:

Sealed **WOOFER (SIZE IN INCHES, TYPE):** 14 x 3, reinforced polymer (2) **RATED POWER (WATTS):** 300 RMS, 900 peak **CONNECTIONS:** Line-level mono, RCA; wireless option; USB setup **CROSSOVER BYPASS:** LFE **AVAILABLE FINISHES:** Satin Black, Satin White **DIMENSIONS (W X H X D, INCHES):** 5.5 x 18.38 x 14 **WEIGHT (POUNDS):** 24 **PRICE:** \$1,399

#### MilleniaSub Subwoofer

**PERFORMANCE** ★★★★★  
**FEATURES** ★★★★★  
**BUILD QUALITY** ★★★★★  
**VALUE** ★★★★★



• The MilleniaSub features two racetrack-shaped drivers.



• A mesh grille in matching Gloss White or Gloss Black protects the MilleniaOne's drivers.

120 hertz, beyond which the speakers seemed capable of bearing the load with no noticeable gap.

In *Rampart*, with Woody Harrelson as an exceptionally complex rogue cop, the MilleniaOne's resolution continued to impress. It was easy to follow overlapping speaking voices in busy dinner-table conversation. At one point I heard a siren and had to pause the disc player to determine whether it came from the speakers or the open window—it came from the speakers. Exactly the same thing happened a few minutes later. That I was having trouble distinguishing between the speakers and the real world says something about the speakers. A techno onslaught in a nightclub was thrillingly immersive, as you'd expect with five identical high-resolution speakers. Just like being there, the formerly longhaired and thin version of me reminded the present-day bald and plump version of me.

*The Devil Inside* uses a faux-documentary format to tell the story of exorcist-priests and laypeople struggling with demonic possession. The vérité-style dialogue recording gave the MilleniaOnes a more subtle way to excel at reproducing

dialogue ranging from hushed whispers to full-frontal raving. The premise that a character was recording everything with a camcorder and mono mike didn't prevent the soundtrack from adroitly using side-to-side panning and occasional surround effects, which the soundfield-loving satellites rendered in startling fashion.

**Better Yet**

I scarcely thought it possible that my assessment of the MilleniaOne could improve, but as it faced musical challenges, that's what happened. *The Wine of Silence* is a unique CD: guitar-synth "soundscapes" improvised by Robert Fripp, arranged and recomposed for orchestra by Andrew Keeling, performed by the Metropole Orkest, conducted by Jan Stulen. The recording was then freely remixed by David Singleton—which involved multiplying the orchestral images, among other unusual techniques (which would probably make for a great 5.1-channel format release). Even in merely two CD-quality channels, I've listened to it with numerous systems, headphones, portable players, and docking speakers and gotten something different out of it each

time. But the MilleniaOnes beat all of the above with the most breathtakingly complex layering, multi-hued timbres, and astonishing transparency. I could hear into the music.

*The Oxford Girl and Other Stories* CD celebrates the 30th anniversary of the Oysterband, British folk-rock veterans, with unplugged re-recordings of classic songs, arranged with voice, acoustic guitar, fiddle, cello, and other instruments—there seems to be no stringed instrument the band cannot play. The MilleniaOnes took an appropriately mercurial approach, flattening the busier and poppier mixes while bringing out the spatial richness of songs arranged with more sparse instrumentation. I can't repeat enough times how much I love the voice of lead singer John Jones, who is to folk-rock tenors what a Stradivarius is to violins, and the speakers thoroughly mined this magnificent instrument for abundant beauty, eloquence, and humanity.

In three afternoons and evenings I listened through all 10 LPs of Keith Jarrett's *Sun Bear*

*Concerts*, which includes five improvised-piano performances recorded in Kyoto, Osaka, Nagoya, Tokyo, and Sapporo. I hadn't intended to make the full traversal—for only the third time since I bought the box on its 1976 release—but once I got started, it was hard to stop. The purity and resolution of the satellites enabled me to hear more of the piano's harmonics, and how they varied from city to city, than I'd ever heard before. I often talk about how a piece of equipment deals with a pianist's left-hand bass lines, but in this case, I was acutely aware of the piano's status as a percussion instrument across the keyboard, soundstage, and frequency spectrum. Even when Jarrett moved to the extreme right-hand side of the keyboard, the high notes still had the palpable impact of hammers striking tightly stretched metal strings. The only flaw in the presentation was a slight relocating of bass at the sub crossover—I could hear descending figures move from the satellites to the sub as they passed the sub crossover.

The Paradigm MilleniaOne sets a new standard in performance for the compact satellite speaker category, and in terms of build quality and cosmetics, it's top notch. As for sound quality, if you want satellite speakers, the MilleniaOne is simply the best I've heard—and if you don't want satellites, it just might change your mind. The MilleniaSub is equally impressive, and equally well built, though otherwise its strongest skill set is in ergonomics. It takes up little space and will go almost anywhere you tell it to, a function of both the flat form factor and the fine-tuning possible with the Perfect Bass Kit. Whether you buy these two products together or mix and match, they are extremely compelling. Paradigm has redefined the compact sat/sub set for the better. ¶

\* Audio editor Mark Fleischmann is also the author of the annually updated book *Practical Home Theater* (quietriverpress.com).

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