EQUIPMENT REPORT

Micromega AS-400 Integrated Amplifier/Wireless DAC

A High Wire-Less Act

Neil Gader

What do you get when you combine an integrated amplifier, premium DACs, and a cutting-edge wireless network? Micromega calls it the AS-400. Based on the Micromega IA-400, a 200Wpc (400Wpc into 4 ohms) Class D integrated amplifier, the AS-400 raises the ante by adding the company's core wireless network connectivity, AirStream, to the package. Like the original stand-alone WM-10, the Airstream standard (Micromega calls it WHi-Fi) is based on Apple's iTunes software and AirTunes wireless transmission protocol. However the latest incarnation is an entirely different animal. It's been thoroughly revised in-house by adding three-stage R-core power-supply regulation, a custom-made 25MHz master clock to reduce jitter, superior Cirrus Logic CS 4351 24-bit/192kHz DACs, and a lower-noise analog section. All the user needs to supply is an Apple or Windows-based computer running iTunes music software. A Windows machine without iTunes will not connect to the AS400.

Visually the AS-400 is a home run. It sports a clean and direct front panel—its hefty volume knob has a nice action and is augmented only by the necessary input buttons plus dual mini-jacks for an iPod and a set of headphones. The solidity of the chassis and casework is impressive, and a marked improvement over the Micromega preamp/amp separates I reviewed in Issue 199. Like the IA-400, the AS-400 features a large blue fluorescent display, with easily readable, 7mm-tall characters that indicate input and volume.

Some may well ask: Do I need this level of network connectivity

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when I already have a wireless network in my home? Can't I just piggyback my music streaming onto that network? The short answer is yes, but you'll miss the payoff. Because the AS-400 creates its own dedicated network, music doesn't compete with the home network for bandwidth. And that's a big plus given the potential bottleneck created by multiple family users who might otherwise be gaming, surfing, or number-crunching. The result is fewer potential dropouts. In fact, so much faith has Micromega placed in its AirStream technology that it opted to exclude digital inputs. There's no S/PDIF, TosLink, or USB. Now that's what I call a high wireless act.

Limitations? Sort of. The Apple AirTunes encoding algorithms currently used to transmit to the Marvel IC inside the AS-400 and Apple AirPort Express don't support high-resolution music sampling rates above 16-bit/44kHz—at least for the time being. But not to worry, thanks to its internal Cirrus Logic 24/192 DACs, the AS400's wireless AirStream will be compatible with high-resolution streaming content whenever iTunes makes that option available.

Trouble-free setup is everything for a computer-phobe like yours truly. Happily, Micromega has endeavored to make wireless connectivity as routine as plugging in any traditional source component. And it has largely succeeded, assuming you have some basic familiarity with a computer and iTunes. The initial handshake between your computer's WiFi and the AS-400 takes just a moment. As the AS-400 powers up for the first time it activates the AirStream network and the small icon on the front-panel display

Inside the AS-400

Micromega is a company on the move. In recent years it's been rejuvenated by new owner and CEO Didier Hamdi, and guided in the States by its importer/distributor Audio Plus Services.

In Issue 199 I reviewed Micromega's PA-20 preamp and PW-400 power amp quite favorably. The AS-400 is a continuation of that upward trend. The AS-400's preamp stage features a low-noise gain section matched with low-noise power supplies. An R-core transformer is dedicated to all low-level signals, thus avoiding cross-coupling between the two sections and preventing any hash from the mains line from disturbing the circuit. Ultra-low-noise regulators feed the preamplifier section to allow accurate low-level resolution. Input switching is done by relays, and the 100k ohm input impedance means that the preamplifier section will not adversely load the various sources connected to it. The output of the preamplifier section is buffered by JFET amplifiers and then balanced to avoid ground coupling between the preamplifier section and the power amplifier modules. A moving-magnet phono section is included. Volume control is by a digitally controlled resistor ladder.

The power amplifier section uses a robust 1kVA toroidal "quiet design" power transformer, ultra-fast soft-recovery rectifiers, and four 10,000pF smoothing capacitors in a dual-mono configuration. The Class D modules are rated at 200W into 8 ohms and 400W into 4 ohms. A DC detection circuit prevents any damage to the loudspeakers in case of a failure occurring to the power modules.

Using the processor bypass and subwoofer I/O permits volume-control switching for a sub in two-channel and multichannel configurations. Via software control, inputs can be renamed from a library list stored in the AS-400's memory, while unused inputs can be switched off. A headphone amplifier is available with a front output, and its separate volume control setup is stored in the AS-400. A true monitor loop is accessible for users willing to insert an external unit in the signal path. The unit is equipped with a full-featured remote control that's comprehensive enough, though with such a dizzying number of identical buttons it's more than due for an upgrade. **NG**

changes from red to blue. Then, if you're running a Mac, simply click on the WiFi icon in the upper right portion of the Mac's desktop and select the AS-400 network "Music," which appears as an available network connection. The first time you do this, the computer will prompt you for the password "airstream"; after that, you're off to the races. Then open iTunes and select the AS-400 in the pull-down menu located in the lower right corner of the iTunes window. If you prefer controlling iTunes via an iPhone/iPad/iTouch, you have two options. The first is to stream audio directly from your handheld device to the AS-400 via Apple's AirPlay. The second, and better-sounding option, is to download the "Remote" app (free at Apple's Web site) that sends just the commands to your laptop or desktop machine running iTunes. In this scenario, the audio data are not transmitted wirelessly, just the track selection, volume, and other commands.

I evaluated the sound of the AS-400 on two levels: as a traditional integrated amplifier from a CD source and in wireless mode. With compact disc, right out of the block the AS-400 had a powerful sense of midrange presence and stability, lively dynamics, and a pleasingly propulsive energy. For me, these attributes created a resolution of vocal nuances that instantly made this amp a top contender in its segment. Whether I was listening to the darkly sensuous styling of Shelby Lynne singing "How Can I Be Sure" from *Just A Little Lovin'*, or the homespun sweetness of James Taylor's "If I Keep My Heart Out of Sight" from *JT*, or Marc Cohn's throaty cover of "The Only Living Boy In New York" from *Listening Room*, the AS-400 never failed to uncover the subtlest micro-information about vocal inflection and interpretation. Tonally, the AS-400 was neutral through most octaves with only a slight darkening on top and small losses of air at the frequency extremes. Piano harmonics were rich and full-bodied with a sweetness in the treble that I didn't typically hear with earlier switching amplifiers. There was a reassuring sense of resonance and harmonic weight throughout. The top end was clean with just a hint of coolness and a slightly brittle complexion on leading-edge details. Transient behavior was elsewhere uniformly excellent—clean, concise, and well integrated into the performance.

The Rutter *Requiem* [Reference Recordings] with the Turtle Creek Chorale is pivotal for my listening evaluations, and the AS-400 didn't disappoint. The vast assembly of pipe organ, choristers, and strings was anchored firmly to the soundstage and there was little to no smearing among adjacent instrumental or vocal images—which is no small accomplishment. Lateral soundstage presentation was excellent, as well. Only at the frequency extremes did the AS-400 lose a little ground. The Chorale's upper reaches were just a shade dry and constricted. And the full dimensions of the cavernous acoustic and stage of Meyerson Center were just not as faithfully replicated as I've heard with other gear.

SPECS & PRICING

Power output: 200Wpc into 8 ohms, 400Wpc into 4 ohms
Inputs: Three analog, one phono, one processor
Outputs: Preamp, headphone, subwoofer
Dimensions: 17" x 3.75" x 14.5"
Weight: 33 lbs.
Price: $4995

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During Vaughan Williams' *Antartica* the landscape of symphonic images lacked the sense of near-topographical relief that defines the layering of string sections, and the ability to reproduce the corners and boundaries of the venue, as well as the sensation of ceiling height and of the backwall upstage behind the musicians.

Bass control was excellent, something I've come to expect from Class D power—the rolling thunder of tympani during Copland's *Fanfare* being a prime example, the steady kick of the bass drum during Steve Winwood's "Higher Love" being another. The Wilson Sophia 3, on the other hand, is a speaker that demands an awful lot from an amplifier. In most instances the Micromega was a model of unflappable consistency and the Sophia sounded fabulous. But if concert-level rock 'n' roll is your thing, then you'll find the AS-400 bottom octaves a little soft.

Turning to the AS-400's wireless AirStream performance,

the sonics maintained the essential character established with the disc player in the system; yet now the music was streaming from my kitchen to the listening room some 25 feet away while I controlled it via an iPad using Apple's Remote app! The AS-400's wireless sonic abilities weren't just a rough approximation of the CD source, or vaguely in the ballpark, or a "close-but-no-cigar" attempt. Rather, they were *stunningly* close. Image placement was spot on, as was the rendering of three-dimensional space. The tonal distinctions between wireless and the CD reference were small enough that it might just as easily be ascribed to a simple choice of disc player interconnect or the individual personalities that the DACs might be contributing.

That's not to say the character of the AirStream was identical. As I listened to solo piano and the acoustic space that enveloped it, the sound via wireless was actually a little more weighty, as if the midrange had a slightly thicker waistline. The top end was a bit sweeter and more harmonically complex—something I never would have predicted. Moreover, the sound was more coherent, as though each piano note was more clearly defined. Likewise, during singer Jen Chapin's cover of "Renewable" her sibilance range was more finely textured and cleanly aligned with her voice's body.

Only in the lowest register did the CD source narrowly edge out the AirStream. For example, when pianist Evgeny Kissin comes down hard on the keyboard, the instrument was a bit more explosive in the dynamic sense, the soundboard resonance suggesting a little more body and bloom. To tell the truth no one was more surprised than I was when I kept reaching for my iPad rather than the disc player's remote control. I kept thinking to myself while gleefully scrolling through my iTunes playlists that I could really get used to this. (Tip: If you're running a Mac make sure the format setting in iTune's MIDI setup matches the sampling frequency you're streaming—most likely 44.1kHz/16-bit. I speak from experience when I say that an incorrect setting degrades the wireless sound quality.)

The Micromega AS-400 is not just about musicality and performance. It's equally about the user experience. For many of us the mere mention of music, computers, and wireless networks sets off fire alarms. Micromega, however, has done its homework with the AS-400 and removed any lingering reservations. Now anyone can contemplate a computer-based music collection and step fearlessly into a future of wireless possibilities—or not. The AS-400 happily let's you have it your way. And believe me, that's a tough act to follow. **tas**