



Aurender W20 Music Server



In our modern world, we constantly see established brands extending their product offerings to increase market share and, thus, profitability. Mercedes and BMW targeted larger pools of buyers by attempting to distill their marques' luxury pedigrees into, respectively, the A-Class and 1 Series. Toyota went upmarket with Lexus, and even Ferrari has occasionally upped the ante with limited editions of such statement cars as the F40, the Enzo, and LaFerrari. The pattern is repeated again and again in various consumer industries and product lines, and the high-performance audio industry is no exception. Speaker manufacturers do it all the time (e.g., Vandersteen's progression upward over 30-plus years from the 2 to the 3 to the 5, then the Seven and, soon, the Nine). Similarly, we have followed closely when technology leaders like dCS push ever higher, from their Elgar through Scarlatti lines to, now, the Vivaldi models.

However, I can't recall any company, let alone a relative newcomer, that has simultaneously pushed as aggressively up- *and* downstream as has Korea's TVLogic with its Aurender music servers. They've just released the claimed edge-of-the-art model reviewed here, the W20 (\$17,200 USD), *and* the X100L (\$3490) and X100S (\$2980), the former recently reviewed by *SoundStage! Ultra* Editor-in-Chief Jeff Fritz. The center of the Aurender line remains the original S10 server (\$6990), which, since its release several years ago, has proved to be more than a mere proof of concept. I first experienced the S10 in Jeff's Music Vault, at The World's Best Audio System 2012 gathering. Surrounded by hundreds of thousands of dollars' worth of gear, the S10 was probably the least-expensive component in that system. But it not only held its own, it spearheaded a weekend of music-sharing festivities as DJ duties were distributed among the attendees via the S10's iPad controller.

According to TVLogic, the lessons learned in designing the S10 enabled their team to "clean sheet" a no-holds-barred reworking of their original concept. In engineering the W20, they deconstructed, analyzed, and attempted to perfect every subsystem and subcomponent, to achieve a server whose performance would merit uncompromised association with likely partnering DACs from Berkeley Audio Labs, CH Precision, Constellation, dCS, EMM Labs, Light Harmonic, etc. Intrigued by such commitment,

and curious to hear how the W20 would fit into my reference system over several months, I received the review sample in January, the week before the 2014 Consumer Electronics Show.

This server ain't no mere computer

Notwithstanding many audiophiles' continued preference to spin discs silver and black, in 2014 most music listening is file based -- whether via computer, iDevice, Sonos, Bluesound, or any number of other storage and delivery machinations. I gave up my CD player years ago, having ripped my CDs -- in bit-perfect AIFF, with the assistance of dBpoweramp and AccurateRip -- and stored them on my home network-attached storage (NAS) and backup drives, to be played through various devices.

The allure of what's come to be called computer audio is obvious, given the power and convenience of managing an entire library of music, as well as the *potential* gains from avoiding the real-time mechanical-electrical challenges of physical media. However, making the transition from a disc- to a file-based system is anything but simple, and rife with problems that can sap a system's quality of sound. It's a far cry from the simple days of the CD player, when you could buy the finest single-box player you could afford; from then on, the only choice was which CD to drop into its tray.

The problems begin with a computer's need for ancillaries: monitors, keyboards, mice, external hard drives, and other peripherals. Not quite a one-box affair. Add to these choices the dilemma of Mac vs. PC. While a Mac is much closer to a turnkey solution, both platforms require extensive configuration for maximum sound quality, not to mention the selection of an operating system and its likelihood of long-term support (e.g., OS X Mountain Lion, Snow Leopard, or Mavericks; Windows XP, Vista, 7, or 8). Each presents a need for constant security updates, patches, reboots, crash management, driver updates, etc., not to mention the fact that these are *general* computing operating systems; the particular demands of the computer *audio* user have been dealt with as, at best, afterthoughts. Then you must choose a control software and user interface (iTunes, Amarra, Audirvana, JRiver Media Center, Decibel, Pure Music, XXX High End, ad infinitum) -- but each of these requires further configuration of the software and computer for the best sound (Integer Mode, Memory Play, WASAPI Event Style, ad nauseam). It's all enough to make an audiophile cry "Uncle!"

On top of these often maddening requirements of configuration and cross-compatibility is the problem of electrical noise. One of the distinguishing features of most superlative high-performance audio components, from DAC to power amp, is that close attention has been paid to electrical noise, whether power-borne or power-supply derived. I am unaware of *any* general-purpose computer, even one largely custom-built for audio use, that has linear power supplies, specialized circuit-board materials, and the myriad nuances we demand in a high-performance audio component.

For these and the additional burdens of computer audio, the audio server was born. While some servers are little more than dedicated computers dressed up as

traditional audio components, many eschew a general-purpose OS from Apple or Microsoft and instead use a Linux-based platform tailored to audio tasks. The most serious contenders leave the conversion of digital signals to analog to the customer's chosen DAC.

Logical

Now, following the X100L and X100S, comes the W20. While their spec sheets make these siblings look more similar than different, the actual degree of difference might be better represented by an analogy: the distinction between best-of-breed consumer video monitors, and reference studio monitors used for color timing and telecine duties in the process of video production and mastering. The latter often cost an order of magnitude more (or more) than the former, despite seeming outwardly similar. With the reference monitor, nothing is left to chance, with careful attention paid to perfection of the power supply, the subsystem architecture, and unimpeded performance in electrically noisy studios and production trucks.



All it takes is a quick lift of the shipping container to confirm that the Aurender W20 is no mere computer, but a serious audio component. It weighs over 40 pounds, and its sleek aluminum case (my review sample was luxuriously anodized in black) and OLED display set it apart. Inside its machined and extruded enclosure are several hogged-out chambers in which reside segregated subassemblies. In one such cavity is the pair of hard drives dedicated to file storage (4 and 6TB drives are available, for a total of 8 or 12TB total storage), which are suspended and encapsulated to prevent their vibrations from seeping into the rest of the W20. Another cavity holds the pair of LiFePO4 battery packs that provide an uninterruptable supply of power (one charges as the other discharges) to the sensitive audio boards. A third cavity contains the 240GB solid-state drive for the Linux-based operating system and for queuing music files for playback. Off-the-shelf parts were not used -- even the motherboard was designed specifically for the W20. Why? Devices mass-manufactured for the cut-throat pricing requirements of the computer industry are often very noisy. You can

dress up a pig of a computer in fancy clothes, but Aurender believes that the *actual* elimination of the deleterious effects of computer componentry requires a more bespoke solution.



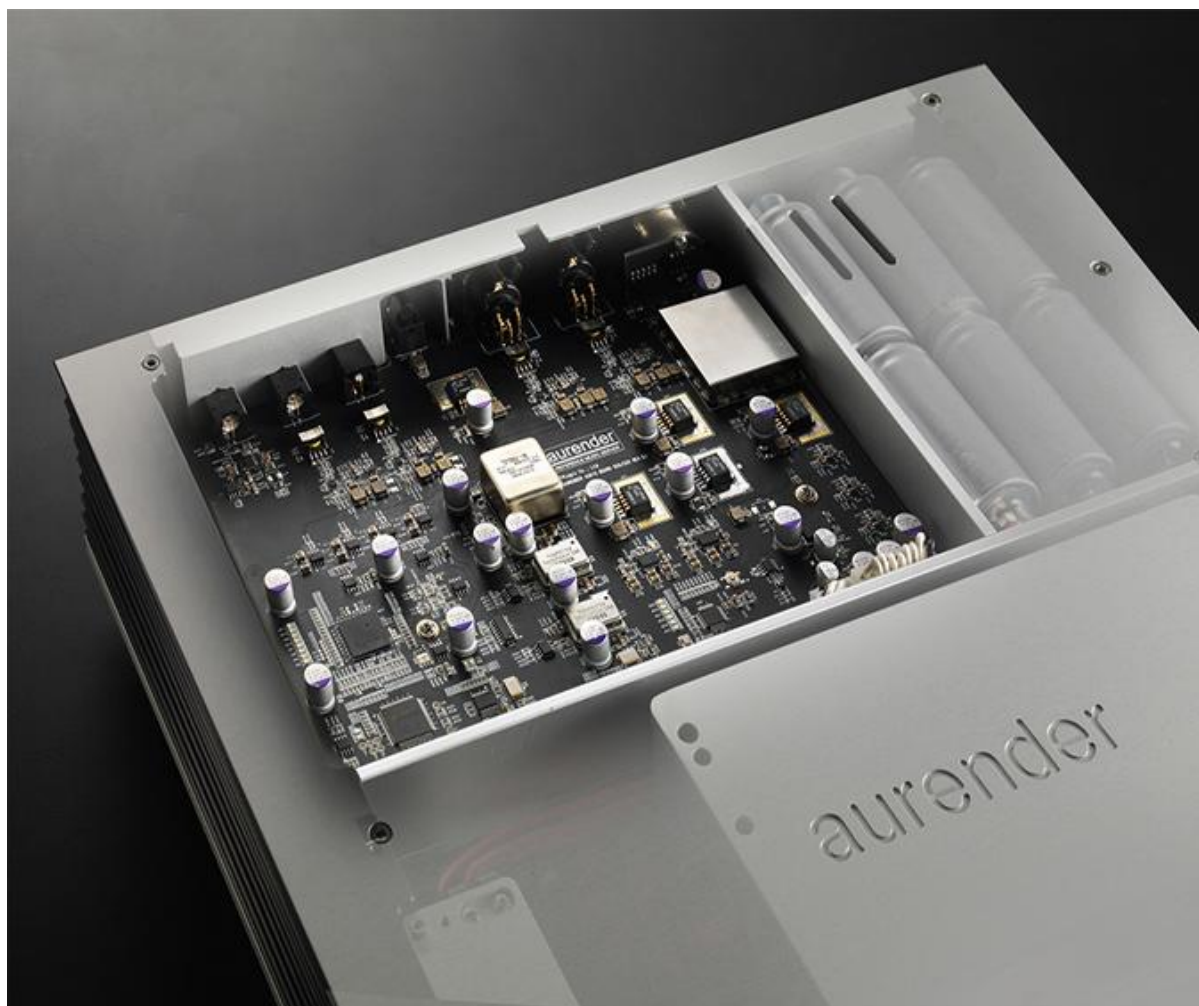
The W20 will handle any sort of file or connection requirement an audiophile may have. It is designed to handle file formats from AIFF, ALAC, FLAC, and WAV to DSD over PCM (DSF, DFF), and sample rates up to 24-bit/192kHz. There are a bevy of digital outputs (one RCA, one optical, two AES/EBU, one BNC), as well as one Class 2 Audio USB output port. A gigabit Ethernet port handles networking duties, both for control purposes and for loading files onto the hard drives. Two USB 2.0 ports allow for direct hard drive connection. Additionally, a BNC word-clock input is provided for synchronization with systems that include a master clock (e.g., a dCS stack). My reference DACs are exclusively of the USB variety, so that's how I conducted all system-integration and listening tests.

Stability, silence, simplicity

In the four months that I lived with the W20 in my reference system, it was the epitome of stability. Unlike my dedicated audio computers, which routinely demand updates -- and, all too frequently, reboots -- the W20 needed to be rebooted only once, following a power outage that caused it to go into battery-controlled shutdown. Contrasted with getting the rest of my home's network back up and running, the W20 was a cinch. Initial setup -- a potential minefield for many -- was made easy by the detailed, step-by-step instructions set forth on Aurender's dedicated website that I ran on my iPad throughout the process. Once the W20 was connected to my network, I simply copied the desired music files from my NAS library to either of the W20's two HDDs. The Aurender automatically created its own library for use with Aurender's free app for the iPad or iPad Mini, which I downloaded from the iTunes store.

The Aurender app deserves special mention. Largely intuitive, it not only handles the primary Play, Create Playlist, Search, and other functions seen on control apps from

JRemote to those from Sonos and Bluesound, it adds some very useful touches I haven't seen elsewhere: dedicated shortcuts not only for genre (e.g., Jazz, Classical, Rock), but also for sample rates and file type (e.g., 16/44.1, 24/96, even DSD). After a short learning period, I was up and running, delving deep into the files I'd copied. The Search function was effectively instantaneous, without any of the lag I've experienced with other server apps. One downside to such a feature-rich, graphically robust app is the fact that it is much better controlled from a full-sized iPad than from a smaller device. Even my iPad Minis seemed a touch too small.



In addition to the W20's stability and simplicity of operation, it imposed absolutely no detrimental effect on the rest of my system. My listening room has dedicated circuits, each from a dedicated subpanel, for my power amplifiers, analog sources, and digital sources. In addition, because my USB DACs are self-powered (*i.e.*, they pull no power through the USB connection) and establish a separate grounding scheme between the USB receiver and their digital and analog circuits, my electrically noisy computers get "house power," rather than feed from the dedicated audio lines. For USB DACs such as mine, the W20's USB audio port allows its 5V/1.0A power output to be deactivated -- just one more means by which the W20 eliminates even the possibility of an adverse power-borne effect. Such attention to detail -- in both TVLogic's design and engineering, and in my room's electrical design -- is what *SoundStage! Ultra* is all about. In my normal setup, I have ensured that my computer audio does not contaminate my system in any way. With the Aurender, however,

even when placed on my dedicated circuits (I experimented both with the analog- and digital-earmarked circuits), I was unable to hear any adverse impact on the sound. In my little corner of the world, this is a big deal; at the very least, it induces confidence in a product.

Sound

As advertised, the W20 handled every file format I threw at it, both PCM (from 16/44.1 to 24/192) and DSD64 (at the moment, I have no DSD128 files). While I mostly listen to complete albums (I tend not to hunt and peck for single tracks), the ease of assembling playlists of individual tracks somewhat shifted my routine. Rather than to any particular genre, I found myself listening across the wide array of music I'd placed on the server -- a good way to confirm whether or not an audio device can handle *all* types of music. In my months of use, I never experienced dropouts, clicks, or other anomalies that might have revealed less-than-optimal operation. Again, the W20 fulfilled its creators' intent as an audio component, not a computer.

I'd never experienced better sound from computer files. This is saying quite a lot -- my primary computer-based server is a dedicated music machine optimized for bit-perfect transmission of all files stored on my Synology NAS. Like the Aurender, this computer has an SSD for its OS and JRiver's Media Center software, is loaded with RAM to handle the queuing of files, and features a purpose-built USB output board (in my case, the dedicated SOTM tX-USB). Everything I've come to appreciate in my reference server -- after dozens of hours spent configuring, optimizing, updating, and rebooting -- was still there with the W20, but without any fuss.

For example, in one of my favorite tracks, "Red Pepper Blues," from *Art Pepper Meets the Rhythm Section* (24/192 AIFF from master tape via a Pacific Microsonics Model Two ADC, Contemporary), the air and breath surrounding the notes was particularly palpable. This is a feature that distinguishes high-bit-rate files derived from analog master tapes from their CD or upsampled equivalents, and is what I believe most digital playback lacks when compared with vinyl, despite that "ancient" format's known mechanical and electrical limitations.



While my reference server consistently shines (as did the W20) in comparison to my 2013 MacBook Pro running Amarra or Decibel, the Aurender squeaked out a lead against it with complex, and especially cacophonous, music. "Construction + Destruction," from *Brooklyn Babylon*, the newest release from Darcy James Argue's Secret Society (16/44.1 AIFF, Cercopithecine Music), is particularly challenging, with its building, swirling interplay of boisterous, discordant surface noise coalescing around melody. I find the work of this 18-piece, brass-heavy, self-proclaimed "steampunk" jazz band incredibly engaging, yet often more challenging than a Rubik's Cube. I had never locked in to these artists' activities so quickly as when the W20 was delivering to my Ayre Acoustics DX-5^{DSD} Universal A/V Engine its bit-perfect, highly regulated stream of ones and zeros. Being able to not only hear more clearly the individual players' contributions, tones, and techniques, but also to pull from the resulting maelstrom the unifying themes -- both trees *and* forest -- evinced the timing, control, and nuance that the W20 allowed every subsequent link in the playback chain to achieve.

The emotion of the music unfolded without veil. All of the contrasting excitement, regret, hope, exuberance, and lament in "Our Basement (Ed)," from jazz trumpeter Ambrose Akinmusire's *The Imagined Savior Is Far Easier to Paint* (16/44.1 AIFF, Blue Note), were on display in the sonic street scene vividly crafted through the interplay of Akinmusire's horn and the voice of Becca Stevens. Compared to his debut album, which bounded with the almost unbridled enthusiasm of youth, this one not only shows the leader's artistic aspiration and evolution, but is replete with the ups and downs of adulthood, including conflict, moments of unadulterated joy, and the daily negotiation of life through a continuum of shades of gray. With the W20 in place, Akinmusire's passions and sentiments were more front and center than through my reference server.

Good for what ails you

With the Aurender W20, TVLogic has taken the heavy lifting out of computer audio. One needn't worry about choices of software or hardware, configuration protocols, parasitic electrical noise, or ground-loop effects. Like the top-flight CD players of old, this edge-of-the-art platform is more high-end than the many-headed Hydras of most computer-audio systems. More important, the W20 pulls out all the stops and hits all the right notes of file management and playback.

That said, the Aurender W20 is not for everyone. That honor -- for *most* everyone, at least -- may well go to Aurender's X100L and X100S, which Jeff Fritz ran through their paces with wonderful results. However, for the well-heeled, obsessive-compulsive audiophile, and/or all who have invested in statement-level digital gear and strive to eliminate from their systems any compromises, the W20 should fit the bill. And if you've bought a dCS Vivaldi digital playback system, what's stopping you? It seems to me that one without the other would be like buying a Ferrari 458 Italia without opting for the carbon-ceramic brakes. Highly recommended.

. . . *Peter Roth*