



JANUARY 2014



W20

COUNTRY OF ORIGIN



SOUTH KOREA

Reviewer: Srajan Ebaen**Financial Interests:** click [here](#)

Source: 27" iMac with 3.4GHz quad-core Intel Core i7, 16GB 1.333MHz RAM, 2TB hard disc, 256GB SSD drive, ADM Radeon HD 6970M with 2GB of GDDR5 memory, PureMusic 1.89g in hybrid memory play with pre-allocated RAM and AIFF files up to 24/192; Audirvana 1.5.10 in Integer mode 1, Metrum Hex, AURALiC Vega, SOtM dX-USB HD with Super-clock upgrade & mBPS-d2

Preamp/Integrated: Nagra Jazz, Esoteric C-03, Bent Audio Tap-X, Crayon CFA-1.2, Bakoon AMP-12R, Gato Audio DIA-250, *Clones Audio 25i* [on loan]

Amplifier: First Watt SIT1, Goldmund/Job 225, *AURALiC Merak* [on loan]

Speakers: soundkaos WAve 40 + Zu Submission, Boenicke Audio W5, AudioSolutions Rhapsody 200, German Physiks HRS-120

Cables: Complete loom of Zu Audio Event, KingRex uCraft and Light Harmonic LightSpeed and Zu split USB cables, Van den Hul AES/EBU cable, Tombo Trøn S/PDIF cable, AudioQuest Diamond Toslink

Stands: Artesania Audio Exotyeric for front end, Rajasthani hardwood rack for amps

Powerline conditioning: Vibex Three 11R on front end, Vibex Two 1R + GigaWatt power strip on amps

Sundry accessories: Extensive use of Acoustic System Resonators, noise filters and phase inverters

Room size: 5m x 11.5m W x D, 2.6m ceiling with exposed wooden cross beams every 60cm, plaster over brick walls, suspended wood floor with Tatami-type throw rugs. The listening space opens into the second storey via a staircase and the kitchen/dining room are behind the main listening chair. The latter is thus positioned in the middle of this open floor plan without the usual nearby back wall.



Prologue. Servers. I've mostly stayed clear of the breed altogether. Maloik. Yet diligence demands I check back in. My first reluctance? Purely personal. My wife and I *hate* wifi. It gives her migraines. My brain too feels badly assaulted by the microwave radiation whenever our Internet router is set for wireless. Hence it's not. My iMac's wifi is disabled too, my work mouse and keyboard are hardwired to bypass Bluetooth, the cellphone hides in the car for pure emergencies. I did buy a basic iPad Mini as iTunes tablet remote since I adore the functionality. But until I find more effective solutions to combat its radiation and that of the even nastier router, I can't use it with my wife home nor for long periods on my own.



My second resistance? Cost. What does a server do which my iMac doesn't do as well or better? For less than €3'000 my fully loaded Mac has a 2TB HDD, 256GB SSD, 16GB RAM and a built-in DVD-ROM drive. Via PureMusic or

Audirvana I bypass iTunes for sound quality and use memory play and other optimization features to spin down the drive and defeat certain computing processes. I connect to the web via Ethernet. Should I need to edit meta data I've got the magic mouse and physical keypad. Music purchases from Qobuz & Co. are a few mouse clicks away. Finally there's that huge beautiful display and two backup drives connect via Lightning for truly rapid file copies. And zero wifi. Peace.

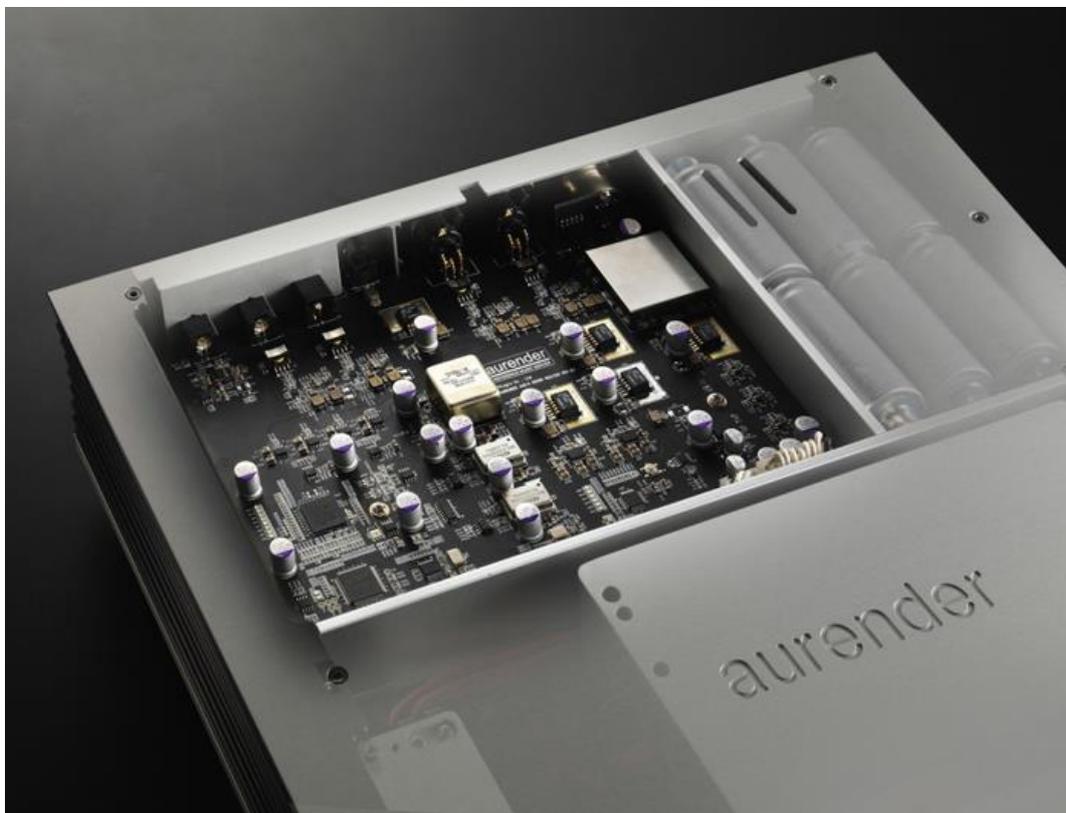
When Aurender's Charles Kim unwittingly entered this no-fly zone about reviewing their W20, he did confirm how their machine couldn't really be navigated properly without an iPad. It thus needed wifi. He also didn't know of an existing way to use my iMac's display instead. With screen sharing common between computers today, my feeble techno peasant brain can't grasp why not. Yet everyone confirms that it can't be done. Which ends my tour of hostility towards the music server genus. Down to business for the *huge* majority of wifi lovers apparently blissfully immune to its ill effects.



South Korea has become quite the industrial giant. Think Samsung and Hyundai/Kia for just two. The former are Apple's only real adversary in the giant war on cellphone dominance. The latter's cars have developed an enviable reputation for cost/performance ratio. Hifi too has its Allnic Audio, April Music, Bakoon Intl., Calyx, Emillé Audio and SOTM. On scale those stay close to high-end audio's usual boutique model. Aurender's original maker Widealab Inc. meanwhile was absorbed a year ago by TVLogic Company Ltd. who in Korea

enjoy an 80% market share of high-performance HD video monitors. That spells enviable resources for both engineering and distribution. In fact on my wired tablet plea Charles had said that "it's technically possible of course but our software engineers are always very busy with ongoing projects. I think they almost finished the latest iPad version of our Aurender App and are working on the Android version. They have to add features and improvements to the system and application software plus develop new products. But I'll pass your feedback along and try to send back theirs. It's true, more people are beginning to worry about too much electromagnetic radiation in modern life."

For their top Aurender W20, the core specs parallel my iMac's with 2 x 3TB HDD (more), 240GB SSD (nearly identical but can be optionally doubled), 4GB RAM (less). Then things transcend the Mac. Aurender's 100-watt SMPS for their in-house developed CPU is fanless whilst the audio circuitry runs off 24/7 auto-cycling LiFePO4 battery banks. A third bank protects against AC power failures to safely shut down the device, avoid crashes and run flash recovery. The operating system is Linux based. For file compatibility there's AIFF, ALAC, FLAC, WAV, M4A, APE and DSD64/128 via DoP. My iTunes library should thus export without issues. On i/o socketry I'd get coax, Toslink and BNC, 2 x AES/EBU, a custom XMOS class 2.0 USB output with defeatable power and a word-clock BNC input.



Aurender's hard drives are rubber suspended, encased in damped chambers, used only for music storage and advertised as running completely silent.

Playback caches in SSD as a memory buffer like my PureMusic and Audirvana software players do it. Clocking is handled by an oven-controlled crystal oscillator and an FPGA. The twin AES/EBU outputs support the DualWire 96kHz+ dCS Vivaldi system and equivalent converters from Esoteric, MSB and TotalDAC. Physical dimensions are 430x106x370mm WxHxD. Weight is a solid 22kg. Finish is black or silver. On hardware and features the W20 really does read tweaked for the very top of the high-end game. Which comes at a concomitant price. The €15'000 buy-in eclipses my iMac by a whopping *five times*. Murder she wrote. For that it would have to really kill my computer. Send flowers to its funeral. And water them weekly.



250GB Samsung 840 Series SSD

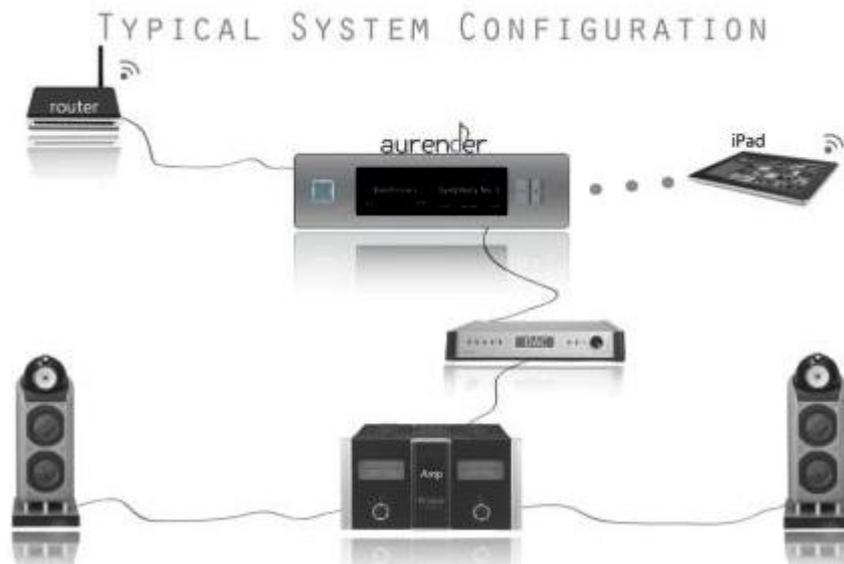
Er, wait. You can't even rip discs with the W20 because there's no drive. Should you connect one to a USB data port, you're limited to FLAC whilst metadata are retrieved with FreeDB via a live Internet connection. "But we don't promote this feature because it's better and easier to use a computer due to the need for editing incorrect metadata." Cough. No wonder my digestive system goes into total convulsions the moment I smell music servers. Okay, no more of that. I'd focus on the always alluring promise of better sound. I'd prepare myself for a revelation. Would I—better late than never—become a music server believer and join the song of those who claim that regular computers are bad for audio? Or was this dog too old to learn new tricks?

A day after Aurender forwarded my DHL tracker for the inbound W20, this broke: "We are proud to announce the launch of the new Aurender X100 digital music player with internal storage and bit-perfect playback of DSD, WAV, FLAC, ALAC, APE, AIFF, M4 and other major formats at native bit/sampling rates. Designed to be used with USB-compatible DACs, the X100 is equipped with the same high-performance USB Audio Class 2.0 audio output originally designed for our W20

flagship model. Other connections include a Gigabit ethernet port for network connectivity and two USB data ports.

"The X100 uses the same solid-state cache playback system as the higher priced S10 and W20 models. This eliminates latency, jitter and noise encountered in systems which use disk drives for playback. The X100 also uses the same Aurender Conductor App for iPad/iPad Mini as the S10 and W20." For the reluctant ones who bitch over most audiophile servers costing so much more than a top iMac or equivalent Windows deck, the X100 pricing salutes us with a grin. It's \$2'999 for the 1TB version and \$3'499 for the 2 x 3TB." Hola!

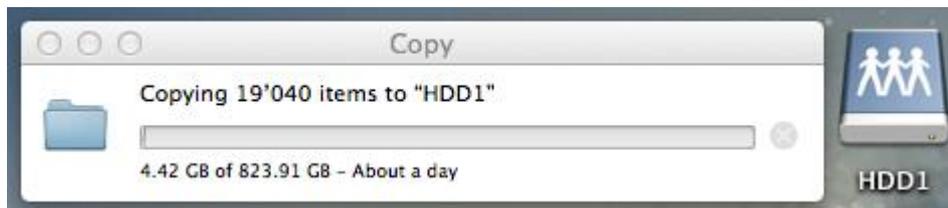




To spare us endless pages of setup routine, those interested in the blow-by-blow process can go [here](#) for the user guide, [here](#) for the latest software release version notes. Aurender's drawing shows the usual setup. To transfer my iTunes library meant connecting iMac to W20 via Ethernet to bring up Aurender's HDDs in OSX, then doing a drag 'n' drop.

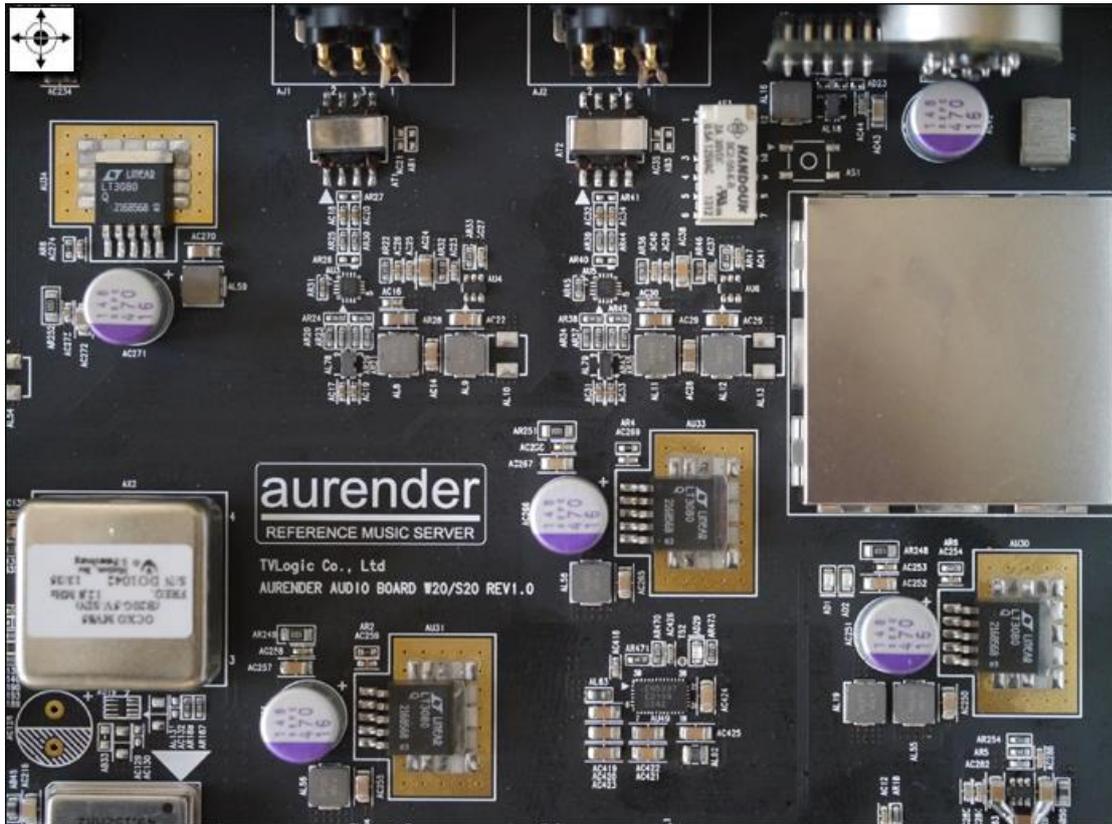
Unlike my Lightning backup drives to which my entire library can transfer in just 2.5 hours, the glacial Ethernet connection announced 'about a day' to transfer 823GB. §*^~! Plus all album covers had to scan to the Aurender app. Time to learn a few new tricks.

Now some W20 mother board views. Since the W20 only does digital, there's no D/A converter or analog output stage. The amount of bits and bobs still required to make it run is surprising then.



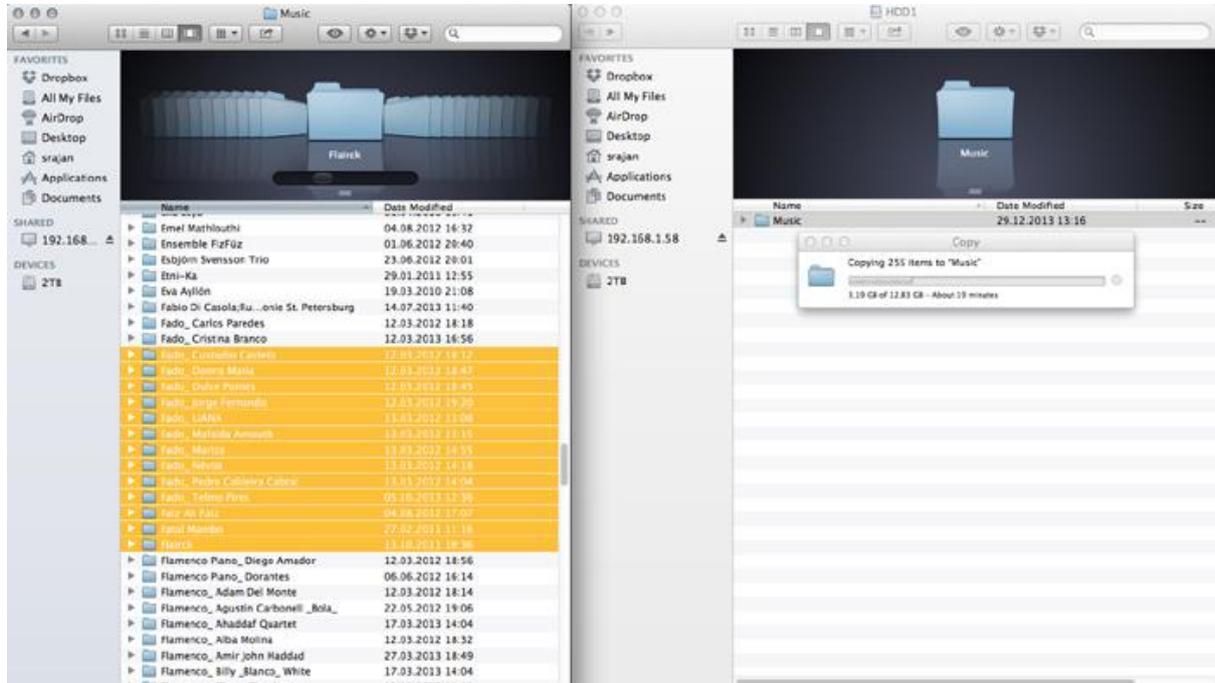
We see a Xilinx Spartan 6 FPGA, an XMOS asynch USB transceiver, two Seon clocks for 45.1584MHz and 49.152MHz, a MV85 temperature-controlled crystal oscillator running at 12.8MHz and assorted ICs, caps and resistors.

Here we get more regulators, coils and that fully encapsulated off-limits Area 51.



One should be quite impressed by Aurender's massive casing, its internal partitions to shield various circuits and the massive encapsulation of the HDDs in aluminium. If one built what in essence is a stripped-down music computer from scratch, this is how hardcore audiophiles would probably do it. Where Swiss ReQuest go even further with their statement The Beast at right is a slot drive for integrated ripping; a 7-inch touch screen with virtual keyboard to enable full navigation and meta data editing without WiFi; MSB-based D/A conversion for analog outputs; and optional MSB extremist analog volume for amp-direct drive.

may not have been a Gigabit hub or there was something wrong with the cabling." My 'hub' was the Internet router our local IT provider Swisscom had installed. Cables were two 10m runs of generic Ethernet, from W20 to router and iMac to router.

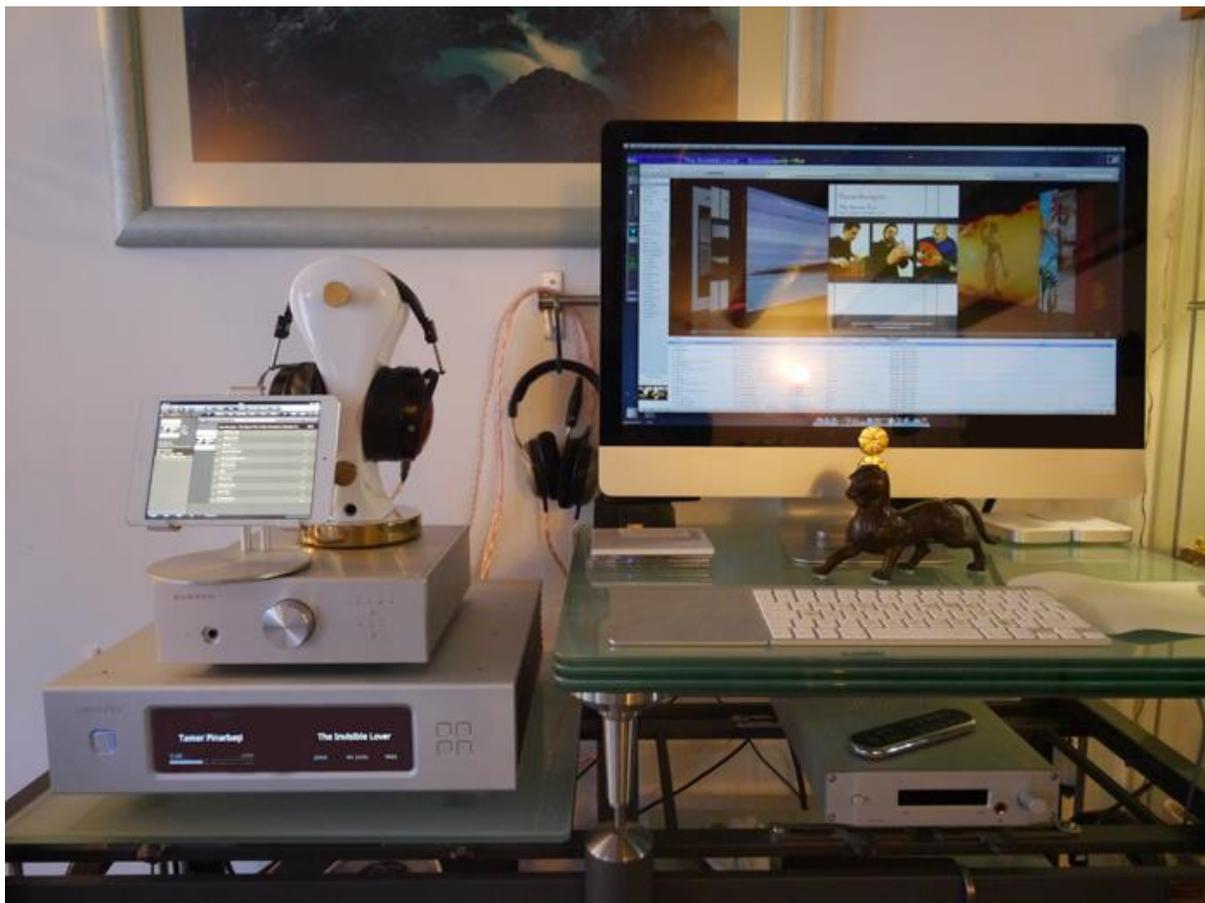


Exporting had dropped a number of album covers presumably because they exceeded allowable size. Whenever I must manually import covers into iTunes, I go for the biggest versions I can find. Those look best in FrontRow mode but don't migrate into my Astell&Kern AK100. Nor apparently the Aurender app. If you like complete covers—I do—this could mean some cleanup. All non-standard meta data glyphs like ä, æ, ç, é, ñ and even rarer ones from the Turkish alphabet posed no issues though Greek was out. They also showed fine on the W20's front display.



Coming from iTunes, a small learning curve with the Aurender app could be having to create playlists. One can't simply select an album, hit 'play' and expect to hear it beginning to end. It'll play the first track, then stop. That's because the entire album must first be moved into a playlist. I found this counter-intuitive and inconvenient but it's certainly easy to learn. iTunes too probably took some getting used to. It's simply been a few years. I don't remember it now.

What I couldn't figure out? How to switch between W20 outputs. After hooking up USB, I found that the manual stated not to use it for audio. Now I connected my BNC/BNC Tombo Trøn in parallel. Switching inputs on my Metrum Hex, I couldn't get sound from BNC even though its signal lock light came on. Only once I unplugged the USB cable did I suddenly get sound on BNC. Investigating a bit more, the manual should have specified that out of the three USB ports only the upper one designated 'USB Audio' is to be used for data output. It has "special power circuitry and shielding to prevent noise in the digital signal". The lower two USB 2.0 ports are only for data input like file migration, not listening. Now I switched my USB cable to the proper audio-approved port but still no joy. Whilst Aurender's Charles Kim confirmed that all digital audio outputs were simultaneously live, my DAC couldn't switch between them.



I ran on-the-fly comparisons like this: W20 --> BNC --> Metrum Hex / iMac --> USB --> SotM --> AES/EBU --> Metrum Hex. The very morning I started my first A/B, both decks cued up to the same tracks, I read that the W20 had won Stereosound's prestigious 2013 prize (shared with the Linn Klimax DS/K, both 15 points) for best music server above ¥1'000'000. The follow-up Playback Design MPS-5 had only managed 8 points, the TAD-D1000 7. With such a decisive victory for the W20—the Linn was slightly costlier still—my expectations were necessarily way up in the clouds. My brain simply felt fried from WiFi radiation, my wife had duly fled our flat for the nearby town of Vevey.



I wasn't impressed when certain input commands on the iPad caused single but pronounced clicks in the W20. This mundane mood persisted for sonics. Whilst they were indeed slightly better than my PureMusic-optimized iMac which proponents of audiophile servers so love to malign, I heard absolutely nothing that'd compel me to trade up. For €15'000 extra (remember that a computer remains necessary to upload new music!), the small sonic difference didn't even factor.

Yet there it was, the difference - not just different but better. My reviewer's job was far from over. To do it properly I simply had to deal with my radiation poisoning first. Thinking it over, I saved a compilation playlist to the W20, then composed the same in my iMac track for track. Before shutting down the iPad completely and disabling the router's WiFi, I also set the Aurender to one-track repeat. Now I could A/B each track in the playlist at length, then use the front-panel back/next controls to do the same for the next track.

To zero in on the offset, I'd fundamentally described it already in my review of Chris Sommovigo's latest budget wonder, the Black Cat Silverstar USB leash. Quoting from myself—a nice change from seeing an isolated sentence or turn of phrase quoted in an advert—"it's easiest to hear with bright edgy recordings which suffer from pixilation effects. If you've ever worked in Photoshop,

you know how its 'sharpen' command increases edge contrast by upping lightness at the transitions. What should be gradual gets whitish. Overdo it and very quickly these transitions stand out most unnaturally like pimples on skin. With our aural equivalents any reduction of hyper edging is easily heard. It telegraphs as smoother, rounder and mellower. A good catch-all for the overall effect is more organic. Back to Photoshop. Start out with a tripod-captured perfectly focused shot to give us high native resolution without any need for post-production fixes. Now the same sharpen command becomes much harder to spot. It's essentially redundant. The same goes for better recordings. That's why it's easiest to take 'dirty' tracks to familiarize yourself with this type of presentational difference. Once you know what to listen for—it's got nothing to do with frequency response—you'll also recognize it on better recordings. There it simply gets more subtle, contextual and gestalt- rather than incident-based."



I'd also said that "the Silverstar played it a bit fuller, smoother, rounder and more relaxed". None of these are qualities conventional measurements per se depict. Because the converter which one might assume was predominantly or solely responsible for SQ remained unchanged—just fed BNC versus AES/EBU—this sonic upgrade should reflect lower jitter. When CD players first split in twain to send native I²S signal as serial S/PDIF over a cable, transmission-induced jitter became a known

quantity. What was supposed to be a sonic improvement (separating transport and DAC) caused a new problem. Computer audio is no different. Though the signal remains in the digital domain until it encounters the converter chips outside the PC/server to presumably be perfectly robust and impervious until then, lower transmission jitter and noise associated with the digital signal still manifest in the conversion process despite all its fancy reclocking. This is no different than how superior legacy transports from Esoteric and C.E.C. improved sonics with spinning discs.

My reaction to a virtual rerun of earlier CD transport observations now for PCfi was admittedly split. I appreciated how Aurender's extreme measures for their digital transport did net an audible improvement. On their behalf I was disappointed by how small this difference was. On my iMac's behalf I was tickled by how onboard segregation—iTunes library on 2TB HDD, OSX and media player on 256GB SSD, memory buffering in 16GB RAM—plus high-quality USB-to-AES/EBU conversion (battery-powered, super-clock'd) left so little under the table. From a visit by Absolve Création's Frenchmen to demo their very expensive cables as a complete loom in situ last year, I already knew how I could pursue equivalently flavored yet bigger changes from costlier cables sans WiFi.



I'd turned down Absolve's review request because I didn't find the cost/return equation attractive

enough. For exactly the same reason I'd have turned down today's request had I been given a prior in-home demo. Knowing upfront of the WiFi angle, I'd agreed because I felt professionally motivated. Was my computer source still up to par? Or had it been - um, rendered sonically obsolete by this latest generation of cost-no-object servers? My answer to this you already know. Even were WiFi no issue because the W20 came with a hardwired tablet remote, it wouldn't change. Aurender's asking price is simply out of proportion to sonic payback. I also find the absence of an onboard ripper deplorable. At least to my mind the core rationale of an audiophile server is eliminating a computer for music. Aurender doesn't. Even a cheap external disc drive still relies on an attached operating system to be accessed. If you continue to buy new music, you will continue to need a computer to use the W20. That's ridiculous. Sadly Aurender hasn't improved my bad attitude toward the entire audiophile music server genre. I still feel like an old dog dreaming of new tricks. But as StereoSound's award for the W20 demonstrates, that clearly makes me a fringe case. Time for the amber.

Parting words. If Aurender's €15'000 W20 is representative of the best current servers—I don't know—it would seem to take a lot of engineering effort to improve just minorly upon a current quad-core Mac computer properly set up to do only music. To work in lieu of a computer whereby online music downloads, meta-data editing, backup protocols and ripping are integrated into a single dedicated hifi component still seems future talk. With the huge biz of IT and its ever escalating popularity of wireless services, reliance on wireless tablets for library access is an obvious convenience for makers of audiophile servers. It's the way the future is set. These servers just plug into it. Why reinvent the wheel? WiFi-intolerant fossils like yours truly simply have little to no say in it. To be contrarian like ownership of this site affords me for a mini blip on the screen, I wish someone as serious about engineering as Aurender would give us another option. I also wish they'd install in their server a fully functioning operating system. Only that would realize the server promise to truly replace a computer, not just lazily coat-tail on one. But one can always hope. For a completely different take on this subject and proper balance, refer to our prior review of the Lumin music server by French contributor Joël Chevassus. It'll show that for every nay there is a yeah, for each hesitation an enthusiastic conviction...