



## Aqua Acoustic Quality La Voce S3 Discrete DAC review

Rafe Arnott | Nov 3, 2018



### **Sub·lim·i·nal – /səb'limənəl/**

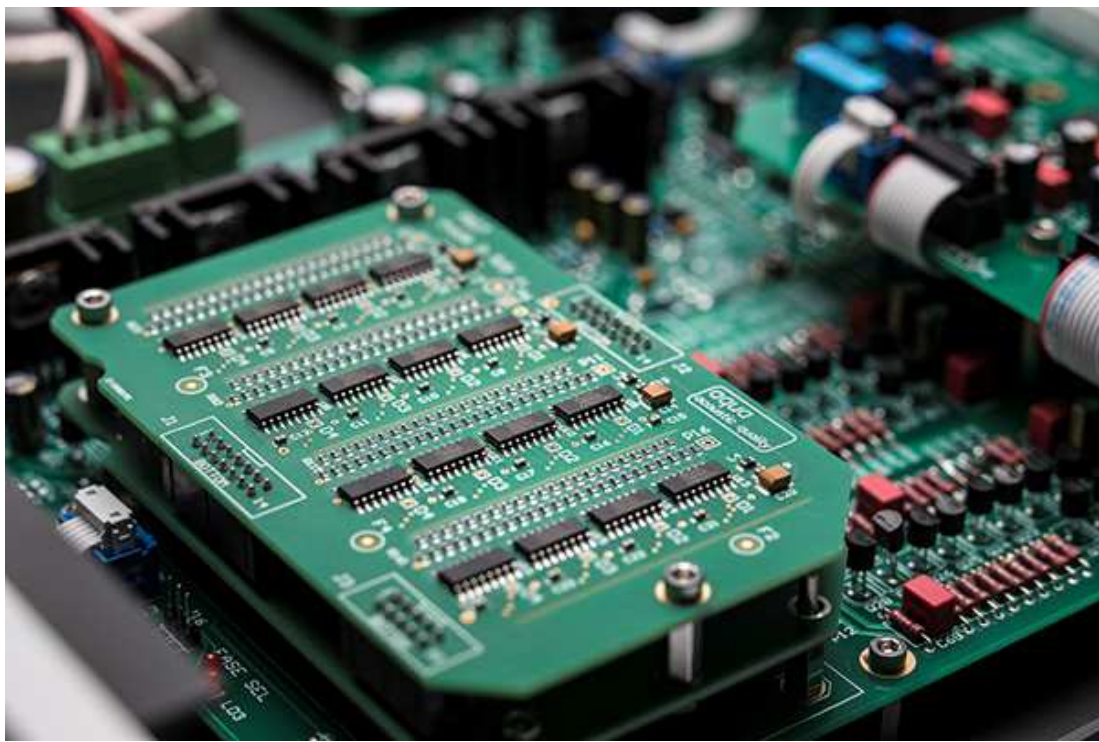
*Adjective* (of a stimulus or mental process) below the threshold of sensation or consciousness; perceived by or affecting someone's mind without their being aware of it.

This is the definition of *subliminal* courtesy of Google's online dictionary and is an apt descriptor for how the Aqua Acoustic Quality La Voce S3 Discrete DAC (\$4,750 USD MSRP) ingratiated its way into my mind as I spent extended listening sessions with it over the past couple months. I found myself coming back to the Voce S3 again and again because of its ability to present the recorded event in such a casual and unassuming manner: Without pretence, sleight-of-hand, fireworks or balloon animals.



Some things just ease up on you over time and before you know it you're turning to them without even being consciously aware of it, hence my dictionary introduction. The La Voce S3 Discrete has a laid-back presentation that always relaxes me while translating all those ones and zeros via the proprietary FPGA-based digital decoding (with no digital filtering) and the discrete R2R ladder DAC that its svelte alloy casework conceals.

As I stated in my preview [HERE](#), owners of existing Voce DACs can upgrade their units to S3 specification with the following hardware/firmware modifications. Which, according to Aqua, is about "protect[ing] the investment... The update for the La Voce units of existing owners consists of the following hardware/firmware modifications:"



- FPGA / decoding board cod. P608, high-resolution up to 384kHz PCM and DSD128
- R2R Ladder resistors board cod. P607
- USB board cod. P901 with new firmware
- hardware modification of main board P601
- hardware modification of I2S / USB board P603

Having not spent any time with the previous version, I'll reiterate that the new S3 is not one of those DACs that *demands* your attention. It reels you in on the sly to hear how it presents the myriad nuances, details, timbral and tonal colorations of the songs you play through it.





Much like a painting can be about how big a canvas is used to create impact, or how bright splashes of paint can arrest the eye and slow it to noticing the details or message that make good art become truly great after first glance, so too, some DACs wow initially with an aural intensity that can deny your ears the hidden truths of what the artist intended to communicate. I tend to find these types of DACs to become fatiguing over time. I'm someone who appreciates big, bold sound – especially if it can be portrayed over the long-term without tiring the listener out, but that's a job which requires curating a holistic approach to the system, integrating a DAC to get the best out of it can be a tricky proposition – but there's a talent of communication too, through *subtle* cues.



This is the approach the S3 takes: it doesn't oversaturate your aural sense, but rather invites you to take in the bigger, cohesive picture through subtlety and it's ability to portray either simple solo acoustic guitar tracks or complex symphonic passages with clarity and *bounce*.

Inputs include USB, SPDIF, XLR and I2S, outputs are both Balanced and Unbalanced. For general listening sessions and critical review sessions I tried both outputs into my McIntosh C2600 and preferred the Balanced output in my system (Associated Equipment listed at end of review), as with all things involving personal sonic taste, *YMMV*.



The Voce S3 handles WAVE, AIFF, FLAC, etc. and DSD files (USB specs are: Asynchronous USB module with resolution from 44.1kHz to 384kHz PCM up to 24 bits, DSD64 and DSD128), but the company has taken a stand to not support MQA, for two main reasons according to Aqua. The first being that their engineers performed extended evaluations of various material that had been MQA-encoded and found “The results that emerged were not positive, especially with regard to the timbre and naturalness of the sound.” The company also said that since MQA is not a lossless codec, that current, freely-available codecs such as FLAC were preferred.

The second is that, according to Aqua, when it comes to the validity of MQA’s technique “their fundamental approach compromises Aqua’s philosophy: the search for natural, dynamic sound, with the least amount of artifacts. This is why Aqua does not use digital filters for PCM playback on its devices. Adopting MQA in which the original sound samples are compressed and submitted to heavy DSP operations, would mean compromising this approach which we are convinced is the right one. Our accomplishments and market reputation speak for themselves.”

"It is widely known that to obtain MQA certification, a disclosure of the "applicant" technology to third parties (MQA-Meridian) is necessary. This is difficult to accept for Aqua because we use proprietary technology based on programmable logic and not commercial DAC integrated circuits. Even more serious is the fact that the type of digital filtering "imposed" in MQA results in similar if not identical performance on all "MQA" devices. This implies a "standardization" of products and their sound characteristics."



So, if *full* MQA hardware decoding is a *must* in a DAC for you, then the S3 will fall short on that sole front. Considering that the codec is nothing if not controversial or divisive among audiophiles, it really depends what side of the fence on MQA your apple falls. I played MQA Studio files through my Aurender N10 Music Server into the S3 without issue.

To dig further into the company's holistic approach to sound reproduction and market interpretation, I spoke with Cristian Anelli of Aqua Research & Development.



## Q&A with Cristian Anelli

Rafe Arnott: *Aqua has created a name for itself with musical DACs that rely on non-oversampling, high-resolution FPGA decoding boards and ladder-DAC technology coupled with a modular circuit-board topology design which allows for factory upgrades as new technology the company deems worthwhile become available, is this part of the key to creating a strong, dedicated consumer base?*

Cristian Anelli: "The concepts of filterless, resistor-ladder DACs and modularity of the electronics are present in Aqua equipment since the beginning, they are part of its DNA. Today we can say that the belief that we put into this philosophy has been appreciated by our most demanding customers."

RA: *The Voce S3 is in a very competitive price bracket when it comes to the lower-end of upscale DACs (\$5,000 range), is its modular, upgradeable design part of the driving force to hold on to current clientele? You are offering legitimate longevity to an Aqua owner's investment with this type of service and it is one that a number of DAC companies are adopting (via either hardware or firmware upgrades) to maintain a competitive edge in a digital realm where new technologies seem to be part of the constant upgrade cycle for consumers looking for the "latest" tech in their DACs or streamers.*

CA: "All aqua DACs can be upgraded as true modular construction equipment, as is the La Voce S3 Discrete. This on the one hand allows the customer to always benefit from a better performance and on the other maintains the value of the investment over time."

RA: *Aqua has a unique sound signature to their DAC designs thanks to a number of technologies employed in their circuit, power-supply architecture, chassis construction/coatings and digital/analog isolation measures. What do you think sets the company apart from so many other competitors in what is becoming, in my mind, the fastest-growing segment in the audiophile industry: The computer-audio hardware/software market?*

CA: "All the research at Aqua is ultimately aimed at the sound quality, an "unique" listening experience, and for this reason my answer is that it is precisely the sound that distinguishes our equipment."

RA: *Finally, what do you think the biggest challenge facing DAC manufacturers today is?*

CA: "In my opinion, today's biggest challenge is to stay focused on the concrete research rather than being distracted by the periodic marketing phenomena."

## **Listening**

During my time with the La Voce S3 I listened to everything from post-industrial, electronica, rap, R&B, acoustic singer-songwriter, rock, straight-up pop, classical, jazz and blues and regardless of what was playing, the S3 reproduced everything without a trace of *sameness* to any track or album. It allowed the individuality and uniqueness of each song, recording and mastering to come through without adding any flavouring of it's own other than the way it seemed to enhance (in a pleasurable manner) whatever tonal and timbral color was laid down from the recorded event.

This DAC is what I'd describe as just to the left of neutral (left being warmer, right being cooler in my books). Cellos, violins, guitars, pianos, trumpets, saxophones... these all were less analytical and more emotionally provocative in their presentation, especially the wood-bodied instruments. The intellectual inference of music came through with incredibly realistic expression (the cerebral side if you will, where one is listening for certain cues of spatial decay off piano notes, or tonal accuracy to distinguish a violin from a cello for example), which pleased the thinker in me, but the S3 maintained an emotional tenor and this cemented the connection through my subjective-self to the music.

This is the sound of instruments being played by real human beings, vocals being sung that are formed by a real mouth, throat and chest cavity and throw in all the aforementioned subtle cues of every cut to be allowed to reach my ears, but never at the expense of ultimate resolution.





Joni Mitchell's *Blue* album for example, while perhaps a tamer, more *audiophile-ish* pick for critical listening, is an album that I find usually plays "hot" in the treble region and upper registers of Mitchell's voice with a touch of mic overload at times, but here (within the context of the S3 in my system) it came across for more sizzle-less than I've heard it previously both in my various systems over the years or even some mega-buck show setups.

James Taylor's opening guitar strumming on "California" came across with a great sense of body weight and tone to the playing, and Mitchell's voice was crystal-clear and spatially placed beautifully right down the middle of a deep-V sound stage, it also kept south of hot and never strayed into fatiguing (it also never sounded attenuated or tamped down to stop that crispness from edging in, rather, it kept those lilting highs sounding extended and airy) which made me end up listening to the entire album.



*Pillow Lips*, the fifth studio album by new-wave UK band Modern English, opens with one of my favourite all-time cuts on it: "I Melt With You." This 1989 effort is a fast-paced track with real drive, dynamic swings and showed off the transient speed the S3 was capable of reproducing, as well as its ability to allow disparate instrumentation to be clearly threaded together and stay separate if you chose to follow Robbie Gray's vocals, Michael Conroy's bass fretting and slamming or drummer Richard Brown's lightning stick work on the skins. The S3 also translated color and emotion from tracks like "Life's Rich Tapestry" and the title track "Pillow Lips" beautifully allowing Gray's voice to clearly be differentiated from both Gary McDowell's and Conroy's ethereal backing vocals in the slow-paced mix.





Arcade Fire is a supergroup in the sense of the sheer number of players who husband and wife team Win Butler and Régine Chassagne managed to bring together for their Canadian Phil Spectre-ish wall-of-sound that can cause slight instrumentation-congestion issues on some of the DACs I've heard it through over time. For their 2004 debut *Funeral*, cuts like "Neighbourhood #1 (Tunnels)" and "Neighbourhood #2 (Laika)" are standouts for me and the S3 nailed the big atmospheric, live-stage moodiness that these tracks are tonally and timbrally imbued with – especially the background singers and their "woooo-woooo-woo-ah" shining through right down the middle of the sound stage on "Laika" despite the myriad layers of instrumentation trying to fight them for sonic dominance. The S3 allowed every voice, hurdy gurdy, organ, synthesizer, trombone, guitar, concertina and accordion (to name but a few of the disparate instruments employed on this album) to easily identify itself in all their tonal glory.





**Conclusion** With a company-wide focus of hand building DACs in its native Italy, proprietary R2R DAC being fed MOSFET, JFET and BJT for analog and digital DAC power supplies, custom FPGA design, a fully discrete analog stage (no Op-Amps used) dedicated digital and analog power supplies, Galvanic isolation of inputs and construction with RF isolation as a priority coupled with a dictum that puts the natural reproduction of music first and foremost above everything else, Aqua seems to be on a road to music reproduction that I can vibe with. The fact that this, their entry-level offering, has all of these of these features (I'll let the listed specs below flesh out the rest) bodes well for those looking for *more* of the same sound quality farther up the company's line in the La Scala MK II Optologic or Formula xHD DACs. Few DACs at this price point are capable of honestly portraying dynamics, timber, tone and pitch with accuracy while not sacrificing ultimate resolution for the warmth that comes with reproducing the sound of real humans playing music. And even fewer have a built-in upgrade plan in place for future-proofing your investment.



### Specifications:

- High performance proprietary FPGA-based digital decoding without digital filter
- Discrete R2R ladder DACs with low noise precision resistors
- Galvanic isolated S/PDIF - AES/EBU Digital input
- Jitter free digital interface AQlink (I2S protocol), uncompromising digital connection to La Diva cd transport
- Zero S/PDIF Jitter design, digital receiver stage PLL (phase locked loop) technology
- Discrete Regulator (MOSFET, J-FET, BJT) for analog and digital DAC's power supply
- RJ45 (AQlink) input connection, employs CAT6 cable
- Two separate low noise power transformers, one for the analog and one for the digital section
- MODULAR DESIGN with upgradeable multi board system
- Fully discrete analog stage, not even a single Op-Amp is used
- Proprietary USB Firmware/driver: Apple MAC OS - Linux OS : USB asynchronous native support, no need to install drivers software

- Fully upgradeable asynchronous USB module with resolution 44.1kHz to 384kHz PCM up to 24 bits, DSD64, DSD128, operates with computers running OSX 10.7 and above, WINDOWS 10 , 8 , 7 and XP ASIO - WASAPI bit perfect high-speed
- AQ-i modular input: D111 XLR/D112 AT&T ST Fiber/D113 RCA/D114 TOSLINK with High Resolution platform
- Digital phase selector on front panel
- High-quality parts selected for sound quality: 105° long life capacitors/low noise Metal Foil ultra-precision resistors/metallized film pulse capacitors/ultra-fast diodes
- Aluminum anti-resonant cabinet with Nextel
- Designed and handmade in Italy
- Input: RJ45 AQlink (I2S serial bus) - PCM 24 bit/384kHz - DSD64, DSD128 via DoP. BNC coax (S/PDIF) 75 ohm – PCM 24 bit/192kHz - DSD64 via DoP. USB port – PCM 24 bit / 384kHz - DSD64, DSD128 via DoP
- MODULAR INPUT upgradeable, options: AES/EBU balanced 110 ohm – PCM 24 bit/192kHz - DSD64 via DoP
- RCA coax (S/PDIF) 75 ohm – PCM 24 bit/192kHz - DSD64 via DoP
- AT&T (ST Fiber) – PCM 24 bit/192kHz - DSD64 via DoP
- Optical TOSLINK – PCM 24 bit/96kHz
- Analog output: RCA single-ended/XLR balanced asymmetrical

### **Associated Equipment**

- McIntosh C2600 tube preamplifier
- McIntosh MC611 mono block amplifiers
- Aurender N10 Music Server
- Audio Note AN-E/SPe HE loudspeakers
- All digital cabling, interconnects, XLR and speaker cables are Ultra Black by Tellurium Q
- All AC cables are Clarus Crimson (review coming) except for the Tellurium Q Black AC cable used with the Aqua S3
- PS Audio P20 Power Plant