

NDS plus 2x 555PS

MARTIN COLLOMS TRIES OUT NAIM'S FLAGSHIP NDS STREAMER/DAC WITH TWIN 555PS POWER SUPPLIES. DOES STREAMED AUDIO REPLAY GET BETTER THAN THIS?

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Streamers have become a mainstay of Naim's digital audio sources, an increasingly popular function that is now found in a number of *Uniti* integrated amplifier combinations, as well as its more serious separates range. The audiophile oriented *NDS* sits at the top of the latter line, and when reviewed (*Vol7 No1*) we discussed its versatility, based on a range of external power supplies. Entry to the *NDS* ladder begins with an *XP5 XS* supply at a combination price of £8,500. For £10,300 it may be purchased with an *XP5* supply. However, the upmarket £12,800 *NDS/PS555* combo, using the recent 'discrete regulator' supply technology, proved an effective and winning audiophile combination.

The massive dual internal supply sections of a single *555PS* already feeds the analogue and digital sections of the *NDS* separately and very effectively, right down to those separate umbilical Burndy power supply cables. However, that intrinsic separation, inherent in the *NDS* architecture, also allows for the use of doubled *555PS* power supplies, pushing the combination up to a total price of £18,800.

An electronics engineer might well question the possible value of such a suggestion, since the single *555PS* arrangement already uses separate supplies for the analogue and digital sections, and connects to an *NDS* with separate umbilical cables. But such are the subtleties of connection with audiophile equipment it's actually impossible to predict the outcome. Some people may simply trust that the designers will tend not to waste customers' time and money. Better still is to try the alternatives for oneself, as experience with other brands has shown that extra supplies are not always an unqualified success. The intention here is to examine this twin supply *NDS* combination as a standalone streamer/DAC on its merits and in the context of its elevated price.

The £5,750 *555PS* power supply has a massive toroidal transformer, large enough for a serious power amplifier, and provides seven regulated supplies at $\pm 22V$ and $\pm 10V$, plus one of $12V$ and two of $15V$. It comes with a costly and elaborate Naim *Powerline* mains cable. One measure of its power reserve may be seen in its near 16kg weight, and the supply has used the very low noise and wide bandwidth *DR* (discrete regulator) technology since late 2012. Using a pair of *555PS* supplies provides full isolation within the *NDS* between the streamer and digital, and then the analogue audio sections.

The *NDS* unit itself might have a sophisticated mass-loaded, leaf-spring suspension for its electronic and audio internals, conferring very good mechanical isolation, but a complex three-box combo such as this still needs some forethought regarding location. Full performance will not be achieved without using the proper supporting shelves from a good audio rack. Since the power supplies incorporate massive toroidal transformers with their inevitable vibration, hum and radiated electromagnetic fields, these are ideally positioned on two shelves of one rack, while the *NDS* is better placed on another rack. There's plenty of scope for useful experiment with accessory sub-shelves and isolators in less than ideal installations.

After trying several combinations, two *Fraim* racks were used, with the dual *PS555* power supplies on one rack and the *NDS* on the other (sharing with other 'quiet' components). Good practice was followed with the mains power and the audio connections; the cable array was free from loops or interweaving and reasonably well separated, avoiding resting on stand sections where secondary vibration coupling could result. Despite its audiophile potential, the performance limits will

not be achieved without careful installation – even down to matching the mains cables feeding the two power supplies. (Yes, different cables were easily heard on test!)

Sound Quality

The resident *NDS* was already operating with a well run in *555PS* supply, but the second *555PS* was relatively new, and needed the usual and frustrating period of use to clear out those electronic cobwebs and thus ‘open up’ the sound. Forewarned that my initial reaction might simply be “so what”, I continued to persevere for several weeks. At times I was unaware of any major improvement, save perhaps for a modest increase in clarity and focus, which did not seem commensurate with the additional cost, and was not really sufficient for an enthusiastic independent review.

Then, and after some weeks, a barely identifiable fine haze began to clear, and the soundstage took on an enhanced focus, with a more precisely illuminated and ‘locked-in’ quality, significantly improved macro and micro detail and more expressive dynamics. A worthwhile increase in transparency was also noted. Separate tests confirmed that the very best results did require those separate rack shelves, and that the pair of Naim *Powerline* mains cables did make a worthwhile contribution.

The atmosphere in the soundstage seemed to develop a musical glow, especially with the lights out, showing a rewarding improvement in natural ambience, full of fine detail, space and air. In addition, dynamics showed better contrasts and clearly superior resolution. However, being ultra-critical, and when minutely compared to the single supply option, rhythm and timing did seem a little less taut. The additional supply somehow made the sound more spotlit, even slightly ‘solarised’, and sounded a mite less ‘joined up’ when considered outside a complete Naim system context (note that I wasn’t using a Naim pre-amp). In a complete Naim system context the bottom line will certainly be significantly enhanced clarity and crispness, and an almost ‘punch through’ degree of definition, dynamics and power.

This top of the line *NDS* streamer system is not quite the most detailed, neutral, or the most open and sparkling DAC on the planet, but nonetheless it does all those things very, very well. Happily it also remains one of the most upbeat, dynamic and articulate streamed digital players I have ever experienced. I don’t intend to alter the *NDS*’ sound quality rating, as I find the single supply version as good musically as the double, albeit on subtly different grounds that are ultimately a matter of taste.

Conclusions

It would be pointless to measure the double supply arrangement, as the audible sound quality changes will never show up on conventional distortion meters. A forensic examination with an analyser under the *NDS* cover, probing particular junctions of signal and power supply, might show small differences, but reliably associating any specific differences with sound quality improvements would still be nearly impossible.

It would be wrong to suggest that the addition of a second *555PS* is game changing, since the performance with a single *555PS* is already very good indeed. However, most sound quality aspects are increased roughly in proportion to the additional 30% cost, which will be rather less than buying an alternative new DAC in this sector. For those that can find the rack space and the budget, streaming really does not come with much higher definition than this. Furthermore, the observed changes were also evident when the *NDS* was used as a DAC *via* S/PDIF, and also when directly replaying from a USB memory stick, particularly with the streamer cable plug detached (arguably the optimum USB fidelity mode).

Having lived with it for a couple of months I tried taking out this second *555PS* supply and certainly missed the extra dynamics, depth and clarity. Conversely the well balanced and subtly satisfying rhythmic performance of the single supply also has its appeal. An Audio Excellence rating is certainly valid for using two *PS555* power supplies with an *NDS*, but I can also envisage that in some systems the single supply option might still be preferred.

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Review System

System: D’Agostino *Momentum Stereo*, Thrax *Spartacus*, Naim *NAP300* power amps; Townshend *Allegri* system controller; MSB *Diamond Signature IV Select* DAC with *Diamond* supply, Naim *UnitiServe* network server and S/PDIF source; Naim *NDS* streamer-DAC with *555 PS(DR)*; Wilson Audio *Sophia 3*, Magico *S5*, Graham *LS5/9*, Quad *ESL63* speakers; Finite Elemente *Pagode* and Naim *Fraim* racks; Cardas *Golden Reference*, Naim *NACA5* and Transparent *XLmm2* cables.

Naim Explains

When used with a single *555PS*, the analogue and digital supplies for the *NDS* only share the primary winding of the transformer, while the transformer’s secondary windings, regulators, Burndy power connect cables, and *NDS* internal layout and wiring looms, are all separate and physically separated by the greatest possible distances consistent with other design optimisations. The only connection between the two analogue and digital sub-systems is at a single point on the printed circuit board, close to the digital-to-analogue converter.

In practice some unwanted residual coupling of digital noise to the analogue supplies can be expected through the inevitable inter-winding capacitances within the transformer. Using two *555PS* supplies will eliminate this source of digital-to-analogue contamination. However, just as important (or perhaps more so) is the reduction of total current taken from both *555PS* supplies, allowing both to operate at a lower noise level. Using the second *555PS* just for the analogue side of the *NDS* will be a big contributor to overall power supply purity, as the now removed digital circuitry has comparatively high current demands. In our experience, noise levels far below those that would conventionally define a low-noise supply can nevertheless be significantly audible in the quality of music replay.