

Discrete Regulation

SINCE INTRODUCING ITS 'DISCRETE REGULATOR' POWER SUPPLIES IN MAY, NAIM'S SERVICE DEPARTMENT HAS BEEN ON PERMANENT OVERTIME, UPGRADING CUSTOMERS' EXISTING SUPPLIES. WE GOT TO TRY THE *DR* VERSION OF THE *552PS* PRE-AMP SUPPLY IN THE LAST ISSUE (*VOL6 NO3*), AND NOW MARTIN COLLOMS HAS GOT HOLD OF A *SUPERCAP DR* FOR HIS *SUPERLINE* PHONO STAGE



This review was initially intended to be about the new 'direct regulated' (*DR*) version of Naim Audio's *SuperCap* power supply. (See also Paul Messenger's *Discretely Classy* feature in the last issue [*Vol6 No3*], in connection with the *552PS DR* supply upgrade for his *NAC552* pre-amplifier.) Certainly this piece began that way, making comparative *SuperCap* trials using the *SuperLine* phono stage as a test bed, laboriously A/B comparing old and new supplies while taking into account the knowledge that this kind of messing about can significantly disturb the short term equilibrium of Naim's electronic components. Furthermore, there's that awkward hawser-like power cable and multi-pole Burndy connector to contend with, which sometimes seems rather like fighting with a powerful snake while awkwardly reaching around the back of the equipment rack. However, shortly after these trials began it became obvious that the real point of this review had less to do with the new *SuperCap DR* supply *per se*, but rather what it did for the *SuperLine* moving-coil phono stage when viewed as a complete product.

First reviewed in *Vol2 No6*, the £1,975 *SuperLine* quite deliberately has no on-board mains power supply in order to exclude hum and transformer vibration, and therefore requires one of several external power supply options. These include certain Naim integrated amplifiers or line-level pre-amplifiers, or outboard power supplies such as a *HiCap* or *SuperCap*. The latter two options result in two free standing two-box phono stages at two price points, where the less costly may be upgraded to the more expensive at a later stage. Both these *SuperLine* combinations performed very well in the

2008 review, though I found I could not live without the *SuperCap* option in a high end system context. Furthermore, this version placed the phono stage among the world's finest (despite some instances of radio interference in some locations and with some turntables).

Now, three years on, the £3,795 *SuperCap DR* with 'discrete component', as distinct from 'integrated' circuit regulation (and for that matter the alternative new but untried *HiCap DR* supply), effectively create new versions of the *SuperLine*. Existing owners may choose to reach this point simply by ordering new *DR* supplies on exchange, or by upgrading their present supplies (the *DR* upgrade to an existing *SuperCap* costs £1,295). As the *SuperCap DR* supply settled in, it became increasingly obvious that here was a new *SuperLine*, and this phono stage therefore finally and rightfully took the centre stage for this review.

Sound Quality

I urgently recorded my first impressions before they faded, noting that I had certainly become acclimatised to the existing IC-regulated version, and it had become almost embedded in the overall sound of my disc player and vinyl replay in general. First off, as it was warming up, I reacted adversely to the sound with the new *DR* supply. (At this at this point both supplies were starting from cold; my own *SuperCap* had been unpowered for several weeks, while the new *DR* version had been in use for a few weeks by Keith Howard before delivery to me.)

I initially found the *DR*-powered *SuperLine* sounded softer and flatter, with less dynamic punch

Review System

Krell *Evolution 402E* and D'Agostino *Momentum* power amps; Audio Research *REF5 SE* and Townshend *Allegrì* control units; Linn *LP12/ Radikall Keel*, Naim *ARO*, Ortofon *Anna*, Koetsu *Urushi Vermilion* vinyl sources; Audio Research *REF2 Phono*; Wilson Audio *Sophia 3*, Magico *Q1*, Avalon *Idea* and Quad *ESL63* speakers; Finite Elemente *Pagode* racks; Cardas *Golden Reference* and Transparent *XLmm2* cables.

in the mid bass, less attack on the percussion, less grip and impact on vocals. I could well understand that the owner of a well tuned Naim system with an original *SuperCap/SuperLine* might find this disappointing, less involving and less committed to the rhythm message. “Hmm”, I thought, going off to make a coffee while leaving things running. Thirty minutes later I made another (albeit rather awkward) A/B comparison, changing over that troublesome hawser and waiting for the *SuperLine* to un-mute. Now changes were afoot. The *DR*-equipped *SuperCap/SuperLine* was beginning to show promising signs of greater subtlety, with a little more image depth, more articulate vocals, deeper and less coloured bass, better treble perspectives, and superior three dimensionality. Progress was being made, though I was still not convinced.

But an hour later there was clearly no contest. The *DR* version was forging ahead, and by the end of a week I had become fully convinced that there was now a new and rather better *SuperLine*, thanks to *DR* technology. And this effect is likely to be found to various degrees right through relevant Naim products. (PM certainly reports that this is true for both his *NAC552* pre-amp, and also an example belonging to a local associate.)

A lower noise floor and lower coloration is claimed for *DR* supplies and this was now abundantly evident in combination with the *SuperLine*. This now showed a degree of high end transparency and image depth that's fully competitive with international alternatives, together with remarkable low level resolution from a lower, barely measureable noise floor. For many this would have been sufficient, but a previously unsuspected layer of coloration has also been stripped away, like varnish from an old canvas. Instrumental tone colours are now more vividly differentiated, and consistently so over the whole frequency range, including the high treble. That initial impression of dynamic reticence had now faded, and the sound now had a firm rhythmic grip, and the whole presentation was evenly and firmly timed with consistent neutrality.

Vocals took on a new level of articulation and expression, were better placed in the soundstage. Mild distortions that were thought to be on the disc, or generated by the cartridge, were revealed as exaggerations of existing artefacts, and were now subdued to the point where they no longer drew one's attention. This distortion reducing 'sweetening' effect was particularly evident in the upper mid and treble, allowing the inherent quality of the vinyl medium to shine strongly through.

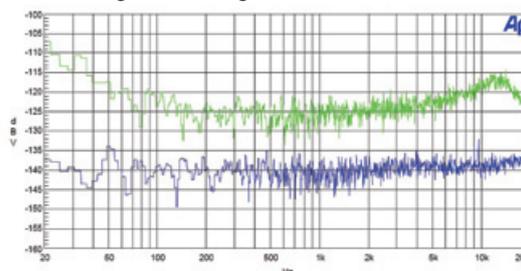
Looking back at the 2008 *SuperLine* review, I find that in context I had described very similar qualities

for the original *SuperLine*, scoring it at 120 with *HiCap* supply and 145 for the *SuperCap*-powered version. A/B comparisons with this new *DR* supply suggest that the *SuperLine/SuperCap DR* combo has jumped up by a third from an audiophile viewpoint, taking it to a state of the art 205 points, and with class leading rhythmic performance. (I can only guess the alternative *HiCap DR* effect but it could well take the *SuperLine* score to around 150, which would also make it very good high end value.)

Conclusions

The 'new' *SuperLine* phono preamplifier, and consequentially the *SuperCap DR* supply, are both highly recommended. In context this upgrade is a bargain.

Old Naim regulator noise green, new in blue



The Discrete Advantage

Even though Naim's 1999 *NAP500* power amplifier used a discrete regulator design for its sensitive low level circuits, the regulator module used throughout Naim's numerous other outboard power supplies continued to be based on a tried and tested 741-series monolithic integrated circuit.

Every regulator design has its own character, as it contains a high feedback amplifier confronting audio-related signals on its power lines, and also uses a number of passive components that inevitably have audio signatures. Furthermore, a regulator must also be 'voiced' to maintain the characteristic timing and dynamic qualities in the circuits it supplies.

The general marketplace trend towards lower coloration and greater transparency indicated that research could be worthwhile to see whether the existing regulator module could be upgraded, thus benefitting both current and historic electronics. This proved less easy than anticipated, as in certain cases the rest of the power supply build needed retuning to optimise the result, while the new regulator itself required lengthy auditioning and adjustment to ensure that it consistently benefitted the entire range of partnering audio electronics. The work took far longer than first anticipated, as initially certain aspects of sound quality slipped backwards with some equipment.

Low level audio circuitry is somewhat susceptible to power supply noise, and improvements in the noise level, and in audio quality related regulation or line stability, directly affect numerous aspects of sound quality. The new regulator circuit is therefore built to audio amplification standards, using carefully selected discrete components, including polystyrene and film capacitors, discrete reference resistors, tantalum decoupling, and well heat-sunked Sanken transistors. (A factory supplied graph shows the audio spectrum of noise for the old and new regulators.)

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AUDIO EXCELLENCE

Prices

SuperLine	£1,975
SuperCap DR (exc. Interconnect)	£3,795
Upgrade to existing SuperCap	£1,295

Contact
www.naimaudio.com
Tel: 01722 426600