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# The darTZeel NHB-18NS preamplifier

by Chris Binns

Of all of the components that make up a hi-fi system, experience shows that it is the pre-amplifier that presents the biggest enigma. The task it has to perform is, in theory, pretty straightforward; directing the signal from the desired source component and controlling the volume.

Compared to the process of extracting information from the reflective surface of a CD or the groove of an LP, or driving massive amounts of power into a loudspeaker whose job consists of converting electricity back into recognisable audio, it should be a walk in the park. Its not even as if there is any gain needed, as the output from an average CD player is more than enough to drive most power amplifiers into clipping. Hence passives, although in the real world, considerations such as input/output impedance and the capacitance of the cables hinder the attainable performance, while active circuitry provides a degree of isolation and stability against such effects.

Why then, am I so often forced to conclude that the pre-amplifier is the defining component of a systems ultimate performance. And, while the limitations of a poor source component or compromised power amp/loudspeaker combination are relatively easy to identify, the pre-amp often seems to be a constriction or compromise to sound quality that manifests itself in a far more subtle way. Of all audio components, the pre is the one that we expect to be

the most sonically pure and devoid of character, adding nothing while acting as the 'gateway' for the system that everything else connects to. And the truth is that for all the interesting and highly competent audio equipment I have auditioned in a system at home, the number of truly great pre-amps that have left a lasting impression can be counted on the fingers of one hand.

The NHB 108 power amplifier was the first product to appear from Swiss based daRTzeel. A 100 Watt per channel design that was the embodiment of simple, elegant and beautifully symmetrical circuitry, it had a build quality and attention to detail second to none. It also sounded staggeringly good. I was therefore only too happy to have it back while auditioning the 18NS pre-amp, which is built as you might expect, in much the same fashion. Imagine Swiss watch precision applied to virtually every aspect and

red anodising with a mustard gold front panel (which incidentally is much darker than the power amplifier) and I guess this is a look that you will either love or hate – me, I'm making no comment. Further enhancing the 'glitz' factor is the gold plated nameplate that you send back to the manufacturer to have engraved with the serial number and your name once you have purchased the unit. Front panel controls consist of a power button, small toggles for mute and mono (hurrah!) and two rotary controls for input selection and volume that are labelled 'Enjoyment Source' and 'Pleasure Control'. A sense of humour lurking under the serious exterior?

Internal construction is about as good as it gets, using selected components and no less than twelve input boards on which the connectors in one of the neatest Finally, three multi coloured Led indicators indicate the status and operating conditions of the pre amplifier.

The 18NS has four single-ended line-inputs together with one balanced; the RCA's are duplicated by (darTZeel's proprietary) 50 Ohm BNC's and there is a phono input; yep, the darTZeel has a fully fledged phono-stage on board, a trend that seems to be returning. Outputs consist of the usual fixed level tape, balanced and RCA options, augmented by three separately buffered BNC's specifically for the 108 power amp (the instruction manual ►



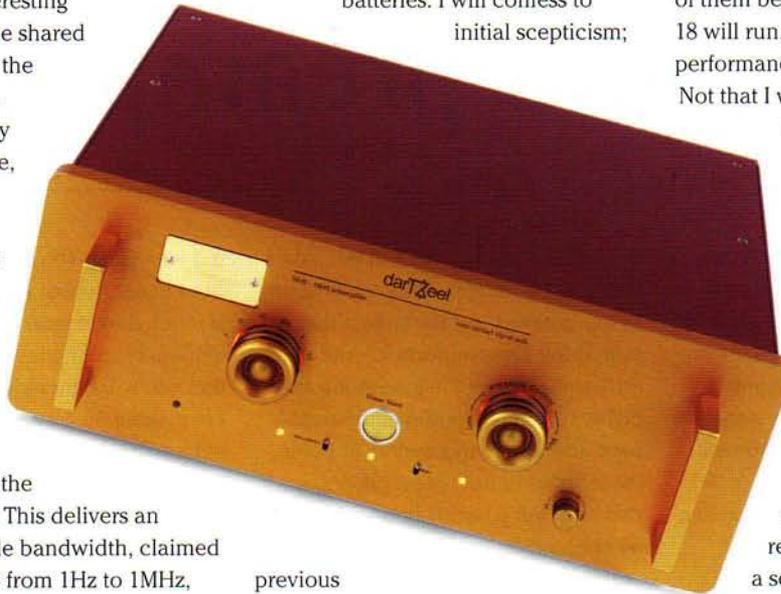
you begin to get the picture; attention to detail and refinement is the order of the day. Aesthetically the darTzeel is quite conventional in its shape and mechanical construction, but the metalwork is finished in an industrial

► talks of incorporating filters for bi or tri-amping at a future stage).

The electronic design has a number of interesting aspects and some shared philosophy with the power amplifier. Thus the circuitry employs a simple, symmetrical configuration utilising discrete components (rather than op-amps) where the signal passes through only six transistors in the main gain stage. This delivers an impressively wide bandwidth, claimed to be within 1dB from 1Hz to 1MHz, with no overall feedback applied. Each input has its own dedicated gain stage, which remains permanently connected and is activated when required, thus avoiding any kind of switching in the signal path. Likewise, there is no potentiometer or resistor network in line with the audio, volume control being by passive attenuation governed by a dedicated processor via analogue optical couplers, offering 192 steps in increments of 0.5dB. This leaves the volume knob whirling like a dervish to make any ground, while the remote rather overcompensates with sudden lurches up or down. Acceptance angle is narrow but otherwise it is a simple, tactile handset (unlike so many others). For once the balance control is subtle in action, rather than swinging wildly left and right. The phono-stage follows similar design criteria to the line-stage, utilising discrete components to provide 60 db of gain, although both this and the loading are internally adjustable using a soldering iron; good for sound, bad for convenience.

The darTZeel comes with a separate power supply housed in

a small, unobtrusive stainless steel box, although this actually functions as a charger for the 18NS' onboard batteries. I will confess to initial scepticism;

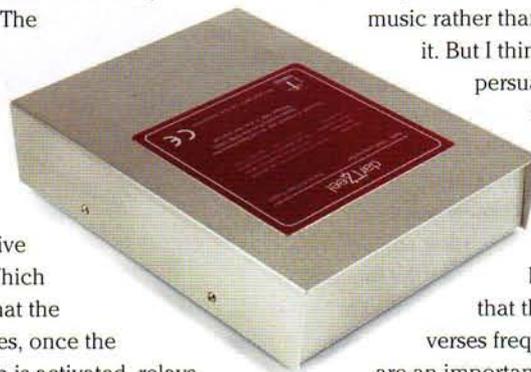


previous experience (now many years ago) with various designs involving re-chargeable Ni-Cads led me to conclude that the complications of using battery power were not worth the lack of reliability and frustration that went with it – not to mention smoke and blown drive units. But things have changed; battery technology has moved on in leaps and bounds over the last few years due to our insatiable demand for mobile technology, and the state of the mains supply is considerably worse, partly due to the rise of switch mode power supplies that are now literally everywhere. The prospect of completely isolating the audio circuitry is now more attractive than ever. Which is exactly what the darTZeel does, once the power switch is activated, relays disconnect the power supply from the internal batteries, which then

deliver up to twelve hours listening in this mode. When switched off the unit charges the batteries, and in the event of them being completely flat the 18 will run, with slightly diminished performance, using the mains supply. Not that I was able to investigate

this, as a testimony to the effectiveness of the power supply management this was a situation that never occurred, and as with all other aspects of the 18's operation it performed seamlessly throughout the review. For those of us used to leaving gear powered up, it's a new discipline having to remember to turn it off after a session, but tellingly I could hear very little difference in quality between a cold start and a few hours of use.

It could well be the combination of a number of different but related attributes, but I had an immediate sense of a very clean, transparent presentation with no detectable fuzz or smearing to cloud the leading edges and subsequent body of sounds. And a wealth of detail; not of the "I've played this track for years and never heard the drummer fart variety" but more constructive information on note shape and textural qualities that enrich the music rather than distract from it. But I think the most



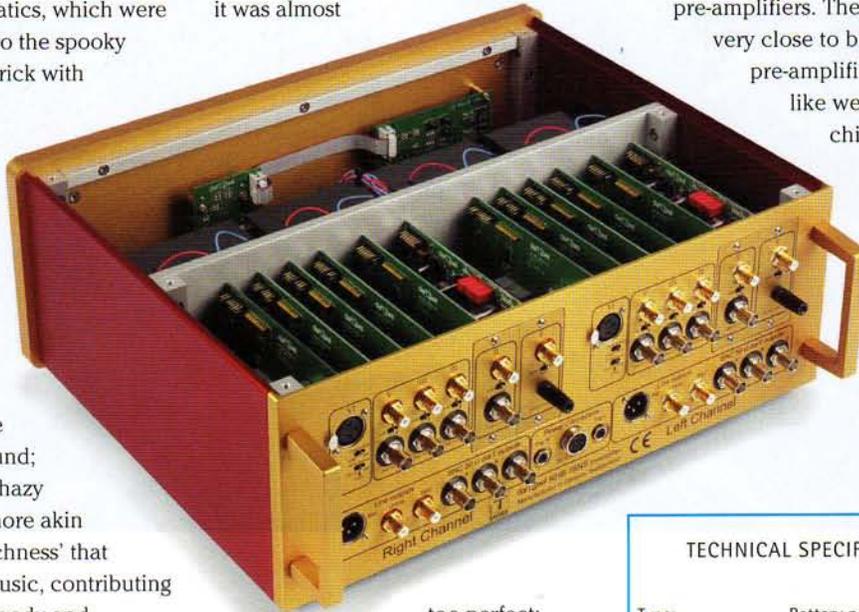
persuasive aspect of the darTZeel has to do with wide bandwidth coherence. I'm convinced that the timing verses frequency issues are an important part of breaking down psycho-acoustic barriers that allow music a more

▶ direct connection to the relevant parts of the brain. In other words, the better a piece of equipment is at doing this, the more relaxed I am listening to it and as a consequence less aware of the hi-fi. This particular aspect of performance was highlighted by the Quad 2805 electrostatics, which were far more willing to do the spooky holographic image trick with the darTZeel in the system, often completely disappearing.

While the character of the 18NS was essentially neutral, I was always conscious of a very slight sense of warmth to the sound; not in an indistinct, hazy valve-like way but more akin to a slight hint of 'richness' that accompanied the music, contributing to a tactile sense of body and substance with natural instruments and voices. Slightly more apparent using the phono-stage, reproduction from vinyl was supremely confident and assured in a way that had me wishing I never had to play CDs again. It majored on flow and involvement over laid bare, concise (and possibly clinical) retrieval of detail that one or two other high-end phono stages are better at.

The darTZeel power amplifier allowed me to examine differences between the pre-amp's three output options. Designer Herve Deletraz has some passionate and distinctive views on cables and signal transmission; hence the unusual 50 Ohm BNC sockets and the matching cables supplied with the unit. Not unexpectedly, these provided the best results with an obvious synergy between the two units: balanced operation via the XLRs seemed sluggish and indistinct by comparison

while single-ended connection was considerably better, but still falling short of the custom interface in terms of speed and focus. Using the darTZeel pre and power together proved an awesome combination, but I occasionally felt that it was almost



too perfect: perhaps a slightly sickly sweetness that could occasionally have you yearning for a bit of aggression or rudeness with certain music. Can you have too much of a good thing? Maybe, but then both the Quads and the Spendor SP100R are on the polite side. DarTZeel employ Rhedeko loudspeakers for product development – which constitute quite a contrast...

Ironically, sometimes the better a product is the less there is to write about it, and after a couple of months spent listening to the darTZeel I am still struggling to define certain aspects of its performance. As one would expect of a high-end product of this calibre, it ticks all the right hi-fi boxes, but also makes the important step forward that ultimately cuts the ties that hold so many products earthbound when it comes to letting the music flow. And that, as I suggested earlier, is

more important in a pre-amp than any other component in the system. The NHB 18NS is a highly desirable product, and one of the very few that could successfully fill the void left by the Ayre K-1xe, a design that already rearranged my views on pre-amplifiers. The darTZeel is very close to being my ideal pre-amplifier; one that, like well behaved children, is seen but never heard. ▶+

#### TECHNICAL SPECIFICATIONS

Type:	Battery powered solid-state pre-amplifier
Inputs:	4x line-level (RCA and 50 Ohm BNC) 1x line-level (balanced XLR) 1x phono (MM or MC)
Gain:	Line – 11dB Phono – 30 to 66dB
Bandwidth:	1Hz – 1MHz +0 -6dB
Outputs:	1x RCA 1x balanced XLR 3x 50 Ohm BNC
Dimensions (WxHxD):	440 x 170 x 335mm
Weight:	Pre-amp 23Kg Power supply 3 Kg
Price:	£15900

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Absolute Sounds  
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