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darTZeel LHC-208

Its front panel proclaims it a 'danalogue amplifier' – as darTZeel's least expensive integrated amplifier to date includes an on-board DAC and network music player
 Review: **John Bamford** Lab: **Paul Miller**

You've got to hand it to darTZeel: the boutique Swiss brand barely registered in the consciousness of audiophiles a little over a decade ago, yet it now represents one of *the* most desirable marques in high-end audio. An analogue replay stalwart to the core, the firm hasn't had a single digital product in its portfolio... until now [see boxout, p33].

Priced at £13,500 the brand new LHC-208 integrated stereo amplifier, rated at 175W/8ohm and designed to provide a flavour of the company's headier pre/power offerings at a more affordable price than its 'close to heaven' CTH-8550 integrated amp [HFN Jul '09], features analogue and digital inputs – with not only a built-in DAC but also a network music player on board.

BREWED SLOWLY

Refer back to our interview with company founder and maverick designer Hervé Delétraz [HFN Mar '09] and you'll see that nothing happens overnight at darTZeel. Hervé spent almost 20 years developing the first NHB-108 power amplifier. No surprise, then, that this new LHC-208 has been several years in the making too – and it continues to be 'work in progress' with various software updates planned for the near future.

In Hervé's words: 'When this project began we didn't have any digital features in mind whatsoever. My intention was to produce a more affordable darTZeel integrated amplifier with a motorised potentiometer, a simple remote handset and perhaps three line inputs.'

Step by step, the idea of including a digital input in a darTZeel machine began to germinate but Hervé was determined to fashion something uniquely darTZeel in design. He employed very simple digital circuits, with no unnecessary oversampling, while, crucially, source formats are handled

natively, with no conversion from DSD to PCM or vice versa.

For its USB input the LHC-208 employs the latest X MOS interface that offers compatibility with 384kHz/24-bit and DSD128 sources. Furthermore, removing the amplifier's bonnet reveals that all circuits are on bespoke darTZeel PCBs, its streaming board developed in conjunction with one of the company's longstanding technology partners.

While, as we've said, there are updates planned for later this year and next, streaming functionality is currently limited to playing music files stored on a server – a computer or NAS – with no access to internet radio or web streaming services such as Spotify or Tidal. Also, as the DAC is TI's DSD1796, incoming 384/352.8kHz PCM files are necessarily downsampled to 192/176.4kHz, respectively.

Naturally it comes dressed in darTZeel's familiar gold and burgundy red livery, the amplifier's front panel dominated by a TFT

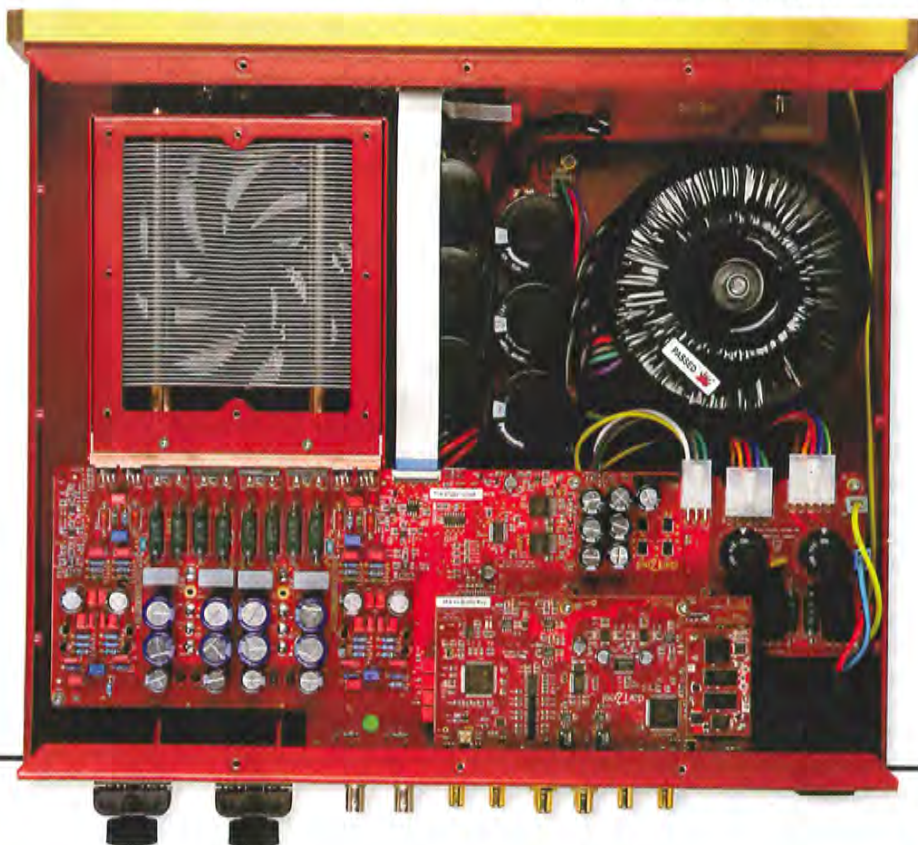
touch screen. Swiping a finger across it brings the unit out of standby.

The company's whimsical eccentricity remains evident not only in its calling the product a 'danalogue' amplifier but also the on-screen messages saying 'Entering/Leaving little heaven corner' when you turn it on/off. This is the firm that labels its preamp's volume knob 'Pleasure Control'...

DEDICATED HEADPHONE AMP

The touch screen offers good legibility and access to all on-board functionality, the plus and minus signs on the left and right portions of the screen to govern volume up/down proving satisfactorily responsive to left finger taps. The display also shows the sampling frequency of incoming data as well as the current volume setting, but it doesn't show album artwork. I *did* mention that it was work in progress...

What appear at first glance to be small rotary controls on the fascia are actually styling details disguising the



RIGHT: Each (mono) power amp channel incorporates a parallel pair of output transistors cooled via a fan-assisted heatpipe. The X MOS-based digital board is a darTZeel design and fully compatible with DSD audio files



unit's IR receiver and front panel sockets in their centres. On the left is a 6.35mm headphone socket, on the right a mini-socket handy for temporary hook-up of visiting portables, with the IR receiver eye centrest of the three. The LHC-208 features a dedicated headphone amplifier with headphone volume controlled independently of the main output; the speaker output is automatically disabled once cans are connected.

At the rear there are three line-level RCA inputs, a 50ohm BNC 'Zeel' input (ready for any future darTZeel source components with a matching 'darT' output), an Ethernet port, USB-B connector for pushing data directly into the on-board DAC from a computer, and four S/PDIF inputs (two optical, two coaxial). A further USB-A connector is for firmware updates and serial-code activation via memory stick, while a single set of Cardas-style 'clamps' provide speaker cable connection.

Determined to maintain the sonic signature of its more expensive amplifiers,

darTZeel has employed the same analogue audio circuits featured in the dual-mono CTH-8550, save that the LHC-208 has all left and right preamp and power amp stages on the same printed circuit board, and both channels share a common power supply and capacitor bank.

And the LHC-208 employs a new custom designed heatpipe cooling system, made for darTZeel by Swiss company Arctic (which specialises in cooling devices for hot-rodded computers in the IT industry).

You don't get a chunky handset hewn from an aluminium billet with the LHC-208, instead a lightweight plastic controller is supplied [pictured on p35]. This helps keep manufacturing

costs down, but was also a deliberate and eminently sensible decision since most owners will surely control playback of their music libraries via a tablet.

A unique darTZeel app for iOS, Android and Windows 10 is in the works which will make the RCU redundant anyway, since it promises to duplicate the functionality of

'The sound is charming and inviting – with thrilling dynamics'

ABOVE: Fascia is dominated by a colour TFT touch screen display affording good legibility. On the left, a headphone output and line input mini-sockets flank the unit's IR receiver

the amplifier's front panel touch screen and provide access to all menu and control settings. The app is scheduled for release next year. In the meantime, when using a tablet as a control point for browsing a music library darTZeel recommends using BubbleUPnP for Android devices and PlugPlayer (or similar) for iPads.

SIMPLY DRAWS YOU IN Fed high quality recordings, the LHC-208 proved capable of tremendous fine detail retrieval and bewitching image dimensionality. There is an impressive naturalness in the way it presents images of musicians in space and the soundstage always appears deep and wide.

The sound is charming and inviting in its overall balance – with thrilling dynamics when the music commands – and as others have observed with darTZeel's costlier amplifiers, its tone is vibrant without ever appearing 'coloured'. It seemingly never fails to draw you in, making you want to relax and listen to the music rather than analyse its constituent elements.

Using a squeaky-clean Melco N1A server [HFN Aug '15] for playing CD rips and hi-res downloads, we listened to the LHC-208 driving a pair of Focal's lovely Sopra N°2 floorstanders [also HFN Aug '15] in the editor's media room. Bass was extended and rich, perhaps not as tightly controlled as with some muscle amps, yet nicely integrated and always self-assured. Midrange and HF was what many might describe as 'valve-like', so what you hear as a result is almost always easy on the ear – unless bashing out Metallica at full throttle!

I don't want to paint an impression that the new 'baby' darTZeel sounds soft and cuddly. Interestingly, The Fab Four's 'And I Love Her' [2009 remaster at 44.kHz/24-bit] ☞

DARTZEEL GOES DIGITAL

It's a sign of the times that even bastions of the analogue replay world are embracing digital networking as it becomes increasingly ubiquitous in modern homes. Your mileage might vary (mine certainly does), nevertheless darTZeel's Hervé Delétraz is correct in observing that many audiophiles consider analogue master tape, followed by vinyl LP, to be superior to any digital source. Says Hervé: 'It's not that we didn't want to enter the digital world before now, it is just that it's taken time for us to turn our ideas into the real thing.'

'Whatever the digital source, some fatigue is perceived compared to analogue which flows like a quiet river without turbulence. Digital is a metronomic way of playing music, as if a robot was imposing the beat instead of musicians. In keeping our digital section "simple", paying due care and attention to internal layout and avoiding any switching power supplies, I've found for the first time I can now listen to digital for more than 30 minutes before switching back to LPs. I've found that digital can be "liquid" too.' By heck, Hervé... D'ya mean to say that in today's high-end audio world the future sure ain't what it used to be?

NETWORK/USB AMPLIFIER

DARTZEEL LHC-208



ABOVE: Four single-ended line inputs are joined by pairs of coaxial and optical S/PDIF digital ins, asynchronous USB-B and network audio ports. Clamp-down speaker binding posts are best suited to cable or spade connectors

sounded eerily stark and calmly uncluttered, allowing forensic observation of the performers and the subtle inflections in their phrasing that often go unnoticed.

Certainly the LHC-208's strong suits appear to be its convincing speed and attack through mid-to-high-frequencies – making acoustic guitars wholly believable – together with seemingly effortless transparency. So while its midrange wasn't warm and 'tubey', neither was it ever wiry or artificial sounding. Indeed, in that regard it almost *could* be described as sounding like a tube amplifier!

ENHANCEMENT TO COME

But it was the darTZeel's innate 'fluidity' that became increasingly obvious the longer I listened, its ability to make sense of the musical message whatever the challenge. Playing the heavily processed Papercutz remix of Lucrecia Dalt's 'Escopalina', the bonus tracks from the Barcelona-based singer/composer's *Commotus* album of 2012 [Human Ear Music HEM019], proved a case in point, as the amplifier exposed the track's many layers of electronic compositional collage while magically obviating the recording's intrinsic shrillness.

Again, the bass wasn't tightly contoured or as controlled as it might be, possessing a slightly thickening 'bloom'. Nevertheless this is something that many might judge advantageous when spending time listening to 'ordinary' recordings – *ie*, most of the time!

What did all this mean when it comes to reproducing exquisitely recorded music? I became mesmerised listening to guitarist

Antonio Forcione's and singer Sabina Sciubba's version of Stevie Wonder's 'Visions' from their album *Meet Me In London* [Naim Label, 192kHz/24-bit download].

The transient attacks of Forcione's nylon guitar strings were appropriately fast and clean (but not 'hyped' to make them sound more like steel strings), his acoustic instrument appearing carved brilliantly in three-dimensional space. Sciubba's voice was also rendered gorgeously, if slightly reduced in the warmth to which I'm more usually accustomed. Still, I couldn't fail to conclude it was a complete and delightfully composed sonic picture.

Despite the LHC-208 being fresh out of the starting blocks and waiting for its streaming functionality to be enhanced via future updates, its charming sound quality is very much all of a piece. We're told the first free update will be an improved menu layout to make the screen more readable from a listening seat – with more status information visible simultaneously, despite the use of larger fonts. Displaying album cover art as well should follow soon thereafter. ☺

HI-FI NEWS VERDICT

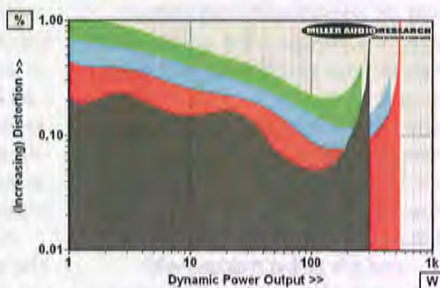
Offering fine sound quality and enough inputs to satisfy most system set-ups, darTZeel's LHC-208 is a highly desirable integrated amp/network player/DAC solution for audiophiles determined to stand out from the crowd. It might not drip functionality, but what it does it executes exceedingly well, with promises of many software updates in the pipeline for those privileged to own it.

Sound Quality: 84%

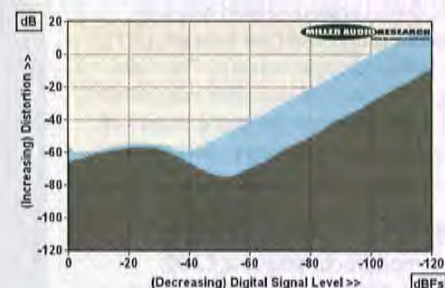
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However you choose to enjoy the LHC-208 – via line in, USB or network connection – its inherent 'colour' is largely determined by the final analogue amplifier stage(s). Clearly based on the CTH-8550 [HFN Jul '09], and despite differences in power specification, in practice its 230W/345W 8/4ohm output is very close to the latter's 250W/400W while its 307W/545W dynamic output is actually higher. Into lower 2/1ohm loads the 453W/265W output is limited by over-current protection, but is still more than sufficient to drive all but the most difficult of speaker loads [see Graph 1]. Like the CTH-8550, the LHC-208's distortion *reduces* with increasing power output, from 0.21% at 1W, to 0.12% at 10W and 0.06% at 100W but remains very consistent with frequency – this is very unusual and a trait that's associated more with digital than analogue systems.

Via the analogue input(s), the LHC-208's response extends to -0.1dB/20kHz and -1.8dB/100kHz although this rolls away slightly earlier to -0.25dB/20kHz and -4.8dB/90kHz with hi-res 192kHz digital inputs. The 0.27-0.33ohm output impedance will introduce larger HF response variations with some speakers, however. The THD vs. digital level profiles [Graph 2] once again illustrate the close tracking of THD vs. frequency over the top 30-40dB of the amp's range, though I'd warn users not to advance the volume over -2dB because this represents the LHC-208's digital clip point (0dBfs in/42V out). The company's implementation of TI's DSD1796 DAC is excellent, with jitter just 260psec at 10W output. Readers may view comprehensive QC Suite test reports for the analogue amp and digital audio performance of darTZeel's LHC-208 by navigating to www.hifinews.co.uk and clicking on the red 'download' button. PM



ABOVE: Dynamic power versus distortion into 8ohm (black trace), 4ohm (red), 2ohm (cyan) and 1ohm (green) speaker loads. Maximum current is 16.3A



ABOVE: THD vs 48kHz/24-bit digital level via USB in/amp out (0dBfs = 225W - 1kHz, black; 20kHz, blue)

HI-FI NEWS SPECIFICATIONS

Power output (<1% THD, 8/4ohm)	228W / 345W
Dynamic power (<1% THD, 8/4/2/1ohm)	307W / 545W / 453W / 265W
Output impedance (20Hz-20kHz)	0.275-0.325ohm
Frequency response (20Hz-100kHz)	+0.12dB to -1.8dB
Input sensitivity (for 0dBW/175W)	37mV / 490mV
A-wtd S/N ratio (Analogue/Digital)	83.6dB (0dBW) / 83.2dB (0dBfs)
Distortion (20Hz-20kHz, An/Digital)	0.11-0.12% / 0.11-0.12% (10W)
Power consumption (idle/Rated o/p)	55W / 650W
Dimensions (WHD) / Weight	440x130x350mm / 16kg

