iFi Audio Pro iDSD

IS THIS THE ULTIMATE HEADPHONE AMPLIFIER? THE PRO IDSD IS ALSO AN EXCELLENT DAC/ STREAMER AND A VERY GOOD PRE-AMP, SAYS ANDREW EVERARD

Review System

Naim *NDS/555PS*, MacBook *Air*, QNAP *TS-563+5xWD Red*, sources; Rotel *RA-1572*, NAD *Masters M32*, Parasound *Halo JC5* (power) amplification; PMC *OB1*, Neat *Iota Xplorer*, KEF *R3* loudspeakers; Oppo *PM-1*, Bowers & Wilkins *P9 Signature*, Quad *ERA-1* headphones; Audioquest, Chord Company, QED cables.

The current boom in headphone listening means that anything 'personal audio' is fashionable. Whereas once many were happy to plug their cans into the socket on the front of an amplifier, often with a simple jack-plug-operated speaker disconnection switch (that was prone to becoming crackly or erratic with age), these days we have amplifiers boasting dedicated headphone amp circuitry, and a whole new breed of dedicated headphone amplifiers.

The headphone amplifier has also evolved into a combined DAC/amp, able to be used with a direct connection to a computer *via* USB. And the range has expanded rapidly, from compact desktop units designed to be used with notebook/laptop and static computers, through to portable models for use on the go.

Although designed to drive headphones, most of these products can also connect to a conventional hi-fi amplifier (normally through a 3.5mm-to-two-RCA/phonos cable) while some are designed to connect to smartphones and tablets too (usually involving special cables or adapters).

Not only do the portables sound excellent, and are capable of driving even demanding headphone loads, these devices also run on 5V USB power or internal rechargeable batteries, and offer useful extras such a format handling up to DSD, and Bluetooth for wireless listening (though not both at the same time!)

However, the *Pro iDSD* is the flagship model from iFi Audio; not only is it distinctly non-portable, but it's also designed to be as much at home in the studio as at home, with a range of capabilities and adjustments way beyond the requirements of even the most enthusiastic headphone listener.

Selling for £2499, and resolutely mains-powered (*via* an external supply), the *Pro iDSD* is a compact 'half width' unit and stands just over 6cm tall, but just a glance at the front panel controls, which are more lab equipment than conventional hi-fi, and the range of connections, should suggest that something unusual is going on here. And so there is – in fact, a lot of unusual…

The *Pro iDSD* handles file formats all the way up to 768kHz PCM, DSD1024 and 2xDXD. It has MQA decoding, and also offers up-sampling of all incoming formats to DSD1024 with a choice of digital filters. The up-sampling is handled by iFi's Crysopeia FPGA Digital Engine, while the XMOS *XU216 X-Core 200 Series* 16-core processor offers bit-perfect working unless up-sampling is enabled, and handles all the digital decoding. A memory buffer is used upstream of this processing, de-jittering the incoming signal, with the output from this buffer further re-clocked using the iFi's low-jitter global master timing clock. This clock also drives the processor and FPA engine.

The output from the processor feeds a 'quad stack' of four bit-perfect DSD/DXD DACs from Burr-Brown, delivering eight pairs of interleaved differential signals – four pairs per channel – for low noise and signal purity. Furthermore, all inputs are galvanically isolated, including the USB Type C 'computer audio' port (on a Type 3 socket rather than the more common Type 2), the S/PDIF optical and coaxial, and the BNC input (which may be used to sync the *Pro iDSD* to other digital components. As you might expect on a device this comprehensive, a choice of four clock synchronisation modes is available. The USB has a separate power management system with multiple regulators and filtering, and the galvanic

ANDREW EVERARD

grounding isolation technology derives from iFi's parent, AMR.

The *Pro iDSD* also has built-in DLNA streaming, so can play from network storage at up to DSD64, or internet services including Spotify, Tidal and internet radio, as well as Apple AirPlay. Both Wi-Fi and Ethernet connectivity is provided (the latter preferred for stability); a wired connection is essential for those planning on streaming DSD files. A USB Type 'A' input is supplied, for connecting USB thumb drives or externally-powered USB hard drives, and there's even a microSD card slot, for playback from those tiny storage devices.

The analogue input side of the *Pro iDSD* is also unusual, with a choice of solid state (J-FET) or valve stages. These two really are separate stages, so signal paths are kept short, and it's not just a matter of switching in the pair of General Electric *5670* tubes when required. It has two different valve operating modes, as 'tube+' reduces overall loop-gain and minimises negative feedback, giving a choice of two valve sounds – probably best described as 'valvey' and 'very valvey'!

The analogue stage is fully balanced and free from direct-coupled capacitors, with a Class A output stage, and power supplies use a powerful DC bus from which all other supplies are derived. Selected ELNA *Silmic* capacitors are located close to the sections they supply in the analogue section; the same company's *Dynacap DZ* 'super capacitors' (chosen for their low impedance and thus fast energy release) support the digital section.

Six individual regulators supply the clock, S/PDIF input and the digital sections of the DAC 'stack', with a separate supply for the USB input section. The analogue stage (including those valves) effectively operates on a 60V rail for best dynamic performance.

The volume has a six-gang Alps motorised potentiometer, also controllable *via* the supplied remote handset. Headphone outputs have 6.3mm and 3.5mm sockets, plus a 2.5mm balanced; a three-position gain switch offers 0dB, +9dB or +18dB. Analogue outputs (both on RCA phonos and balanced XLRs) can be fixed (for using it into a conventional amplifier), or variable (to run straight into a power amp or active speakers). There's also the choice of 'Hi-Fi' or 'Pro' settings, giving 4.6 or 10V respectively on the balanced sockets (2.3 or 5V output on the RCAs). Together with the digital filters available for selectable up-sampling (the choice of bit-perfect operation or three other settings, each of which will be more a matter of personal taste than anything else) one ends up with a unit that has remarkable flexibility.

Sound Quality

To put it another way, it's a device that's fiendishly complex to set up. And even when you get there, you'll never be quite sure you're using the optimal settings for listening. Having spent an unfeasible amount of time experimenting, I have to say I settled on a fairly neutral selection of options: up-sampling was 'off'; digital filtering was left on bit-perfect; and the tube input stage selection was at 'stage one' (as distinct from 'Tube+') in operation. But that's by no means a definitive recommendation (or even a serving suggestion): with some music I preferred the solid-state sound, with other tracks the valve. Or then again perhaps the solid state *was* better, after all...

With all that done, the *Pro iDSD* more than outperformed its compact dimensions, revealing itself as impressive as a pre-amp (provided one doesn't mind all the inputs being digital) as it is as a DAC and headphone amplifier. Quite a lot of that has to do with its extraordinary dynamic range, whether with headphones or through the RCA or XLR analogue outputs. This gives it a wide open view of anything you play through it, and puts the onus on your amplification to live up to what it's being fed. Whether with a very commercial set such as *Dancing Queen*, Cher's lush (and beautifully recorded) take on the Abba catalogue in 44.1kHz/24bit, or Nadine Sierra's captivating voice on her *There's a Place for Us* album (96kHz/24bit), the *Pro IDSD* really gets you into the heart of the performance.

And its sense of effortless power really is addictive, as I found when playing Chick Corea's only slightly bonkers Alice-inspired *The Mad Hatter* set (in DSD128), and then following up with the atmospheric Anna Fedorova *Four Fantasies* set – the recording of which I mentioned in the last issue – in DSD256. The impression of hearing every note being formed before you is palpable in Scriabin's *Sonata-Fantasy*, and then the clarity with which the last part of Beethoven's *Moonlight Sonata* is resolved is quite breathtaking, whether through a good pair of headphones (Oppo *PM-1*, in balanced mode), or *via* a hefty power amp and speakers.

Conclusions

The iFi is an expensive headphone amplifier by any standards (even though pricier rivals do exist). But then it's so much more than what at first it appears to be, and excels at everything it can do, so an Audio Excellence rating seems entirely appropriate.

HIFICRITIC AUDIO EXCELLENCE

Manufacturer's Specification

Inputs	USB Type B, USB Type A, S /PDIF (coax/optical), BNC
Outputs	RCA/phono, XLR, 6.3mm, 3.5mm, 2.5mm headphones
Formats	PCM/DXD to 768kHz, DSD to 1024
Networking	Wi-Fi, Ethernet
Size (WxHxD)	22x6.3x21.3cm
Weight	1.98kg
Price	£2499

Contact:
Select Audio, Tel: 01900 601 954
ifi-audio.com