

## **xDSD – PREMIUM. POCKET-PORTABLE. PERFECTION.**



We are buzzed about the xDSD and our customers will be too. The xDSD is a ultra portable solution for everyday music lovers and high-end connoisseurs alike, and the wild child of the flagship Pro iDSD and high-end micro iDSD Black Label.

The xDSD shines both inside and out – from its AAC/aptX Bluetooth connectivity to its luxurious magnesium-alloy construction. From Spotify to MQA/DSD512, everyone will enjoy rediscovering their favorite playlists.

### **NEXT GEN PREMIUM PORTABLE AUDIO**

*So, what is the xDSD?* It is an ultra-portable product designed to be used with headphones/IEMs/CIEMs and mobile digital sources such as smartphones and DAPs as well as stationary devices like computers, TVs and game consoles.

The xDSD can be operated either in wireless or wired mode via aptX/AAC Bluetooth (wireless) or USB and S/PDIF inputs (wired). It supports high-resolution formats (MQA and DSD) and includes the iFi S-Balanced 3.5mm TRRS headphone circuit, which delivers 500mW of power per channel. In short, the xDSD is a major game-changer for portable high-fidelity.

## PART 1 – THE GUIDED TOUR

### HI-RES WIRELESS ON-THE-GO



High-quality wireless is a major tool in its armoury. With Bluetooth, the xDSD can be wirelessly paired with smartphones or DAPs, so there's no longer any need to stack several units together.

Picture this: Your xDSD stays in your pocket driving your headphones whilst the phone is in your hand, texting or browsing the web.

This ease of use transforms the user experience both on-the-go and at home.

### NEW AESTHETICS

When you first set your eyes on the xDSD, it is instantly obvious that it does not resemble any other portable audio product on the market.

The xDSD exudes luxury and style. The enclosure is tactile, compact and made of rugged, ridged magnesium-aluminium alloy. The moulded plastic means unrestricted BT transmission.

All the switches and connections previously seen on iFi products have been optimised to match the new chassis, yet they still provide easy access to all the xDSD's standout features. This product is a stunning object in its own right with its visuals and user interface merely part of a far grander design.



At the front of the machine, from left to right:

- the 3.5mm input.
- LEDs for kHz and input
- Centre rotary for on/off, volume control (mute) and input selection
- LEDs for 3D<sup>+</sup> and XBass<sup>+</sup> (user-selectable)
- Settings button



At the rear:

- S/PDIF input (for DAPs)
- USB type 'A' male (perfect for CCK/OTG)
- Listen/Measure filter switch
- Micro USB charging port (with status LED)

## PART 1 – LOADED WITH TECHNOLOGY

We are our own sternest critics when we develop new products. Partly because of customer input and sometimes just because we can, for the sheer heck of it, we like to see how far we can push the technology envelope.

The xDSD epitomises this. This section provides an in-depth explanation of its technology and features – and why we've done what we've done so that it is both easy to use AND sonically stunning, as is the AMR/iFi way.

### MULTIBIT DIGITAL ENGINE WITH AMR GLOBAL MASTER TIMING



**Burr-Brown Products**  
from Texas Instruments

The xDSD is very much akin to the micro iDSD Black Label for a perfectly valid reason. Both products are based on the Burr-Brown DSD1793 D/A converter chip and share extremely similar digital and analogue stages.

The digital section of the xDSD is drawn from the micro iDSD Black Label with DSD512/PCM 768 compatibility with DSD via DoP, native DSD playback, USB type A and S/PDIF inputs, XMOS-based USB circuitry and clocks derived from the micro iDSD Black Label with zero-jitter operation courtesy of the AMR Global Master Timing (GMT) clock, re-clocking and data management.

[Global Master Timing® from AMR.](#)



The Bluetooth section inside xDSD is derived from our Retro Stereo50 and is also subject to the AMR GMT clock system that operates with femto precision. In the xDSD, the clock domain not only covers USB, S/PDIF and Bluetooth, but also synchronises the MCU (Master Control Unit) – effectively, the *entire* digital



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functionality of xDSD is slaved to the GMT clock system. It is *global* by name and by nature.

### REMAP – OPTIMISE FOR MQA OR NON-MQA FORMATS

We do not do things by halves. We write our own software code so the xDSD will launch with two specialised XMOS firmware versions.

v5.30 – pre-installed and optimised for MQA

v5.20 – is optimised for music file formats up to DSD512/PCM768 (non-MQA)

Each firmware version squeezes that last ounce of performance from the xDSD to suit each customer.

Just as car enthusiasts load different ‘remaps’ into the ECU (Electronic Control Unit) for their preferred driving experience, we let our customers load their preferred ‘file format remap’ for their own music torque curve.



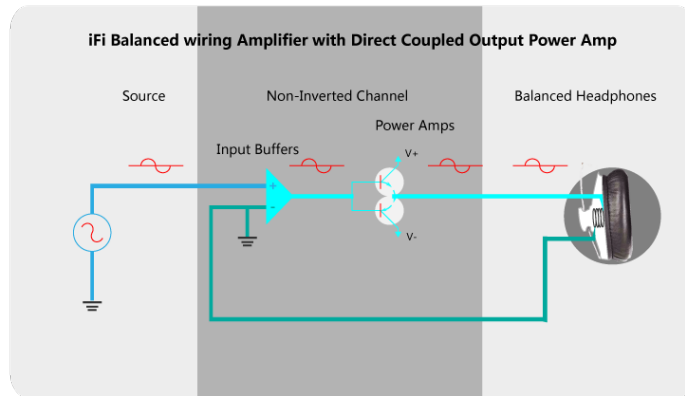
### S-BALANCED OPTIMISED FOR BALANCED IEMs



Our exclusive S-Balanced technology extracts the maximum performance from single-ended and balanced headphones alike:

- With TRRS, the benefit is full dual-mono with grounds separated all the way to amplifiers. Just like audiophile hi-fi systems.

- With TRS, you lose the full separation of the grounds, however, by having two contacts on the ground crosstalk is reduced by 50% over a standard single contact socket.



With S-Balanced, a dedicated negative wire per channel all the way to the star-ground of each channel's amplifier to ensure there is no crosstalk between the channels.

Plugging in unbalanced headphones with a TRS connector instead of TRRS will cause zero issues and, in fact, there is only upside as crosstalk is cut by 50%, compared to using a TRS socket.

All the benefits of balanced, with none of the drawbacks.

And for those who wish to connect the xDSD to a home system, the xDSD can be set to line out mode. Its 3.5mm headphone jack is converted into a fixed 2V level 3.5mm line output. Needless to say, the xDSD remembers its settings as you left them so you can turn it on and pick up from where you left off.

## BRAND NEW 'CYBERDRIVE' HEADPHONE AMPLIFIER STAGE



The 'Cyberdrive' headphone amplifier stage is one of the pivotal new circuit designs in the xDSD. This new design places all parameters of the *fully analogue system under digital control* for a 'best of both worlds scenario'.

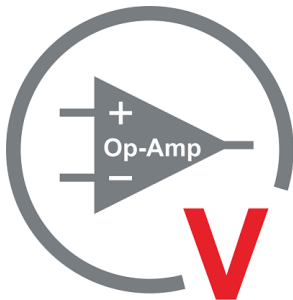
The key components are:

- i. A digitally-controlled stepped attenuator IC

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- ii. iFi proprietary operational amplifiers (W990VST and the high-performance, low-noise, quad J-Fet OV4627A)
- iii. Dual-mono power amp IC headphone drivers.

The xDSD draws upon the existing iFi headphone platform but with the circuitry ratcheted up several notches. Performance is increased, both noise and distortion are lowered and the XBass<sup>+</sup> and 3D-Matrix<sup>+</sup> modules gain electronic switching.



The ‘Cyberdrive’ headphone amplifier provides up to 3.6V output to easily drive high-impedance headphones while offering a low-noise performance that parallels the micro iDSD Black Label’s ‘Eco’ mode with high-sensitivity headphones/IEMs/CIEMs minus the need to switch anything! Simply set volume control as needed and let the ‘Cyberdrive’ circuitry do the rest.

Got Sennheiser HD800s or Focal Utopias? No sweat. The xDSD will drive them to eardrum splitting levels (not recommended!) so, short of the most-demanding HE-6, just connect any pair of headphones.

### **NEW VOLUME CONTROL SYSTEM BEHIND THE ‘CYBERDRIVE’**

In short, we developed a new ‘the best of both worlds’ solution - a completely digitally controlled process merged with attenuation itself done in the analogue domain. Both power mode switching and volume level are combined in one rotary control, which means the xDSD transparently and evenly adapts power modes as the volume setting is adjusted.

This means that while the volume control operates like a digital control system, every ‘Bit’ of resolution is retained like an analogue volume control. (Digital volume controls built-into DAC chips lose resolution at lower listening levels).

### **NEW ‘CYBERDRIVE’ BATTERY SYSTEM WITH EXTENDED PLAYBACK TIME**

We gathered extensive feedback regarding battery-powered products and this aspect of the xDSD has been re-designed from the ground-up.

A dedicated USB micro connector at the rear serves as a charging port. Power is never drawn via its USB type A audio connection. This is reserved for audio only.

In addition, a new 3.8V/2,200mAh LiPo battery (of the same size as its 3.7V equivalent) offers +/- 12% greater capacity, which extends the playback time away from power outlets.

The entire battery circuitry in the xDSD is also subject to the full 'Cyberdrive' system, which not only monitors its state and constantly monitors an attached charger, but also manages the way xDSD is used. Depending on the connected load and real usage, to either maximise playback time on battery mode or battery longevity, one of two modes ('desktop' or 'portable') is automatically selected.

These features were already implemented in the micro iDSD Black Label yet had to be set manually whereas on the xDSD, it is fully automatic and optimised far more extensively by comparison. Finally, in the event of a depleted battery, the xDSD automatically switches over to external USB power and will carry on as if nothing has changed.

On-the-go, depending upon the headphones, the typical listening time is 6-8 hours.

### LATEST 3D<sup>+</sup> AND XBASS<sup>+</sup> FOR HEADPHONES



The 3D-Matrix<sup>+</sup> and XBass<sup>+</sup> are also under 'Cyberdrive' control, hence a simple single multifunction button enables one to cycle through all input options and on/off.

With a pure analogue volume control retaining full-resolution at all volume levels, its selectable 3D<sup>+</sup> and XBass<sup>+</sup> functions offer both great sensitivity and power performance for the ultimate in headphone enjoyment.

When used in Line Out mode, both are bypassed and a straight 2v signal is sent to the output.





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### AND FINALLY

With one eye on the future as to how we all enjoy music and one eye on our portable/transportable line-up, it has been a long road to bring the X-series to market.

Though we are satisfied that this new model encapsulates our very best and latest portable audio know-how.



The xDSD significantly changes the portable meta. It sets the new standard for what customers should expect in terms of features AND performance. All at a stunning price point – US\$399 (ex-tax)/€449 (with VAT).

Travel xClass with the xDSD. Premium. Pocket-Portable. Perfection.

#### About iFi

iFi audio is headquartered in Southport, UK. It is the sister brand of Abbingdon Music Research (AMR). They respectively design and manufacture portable and desktop 'ultra-fidelity' audio products and high-end audio 'home-based' components. The combined in-house hardware and software development team enables iFi audio and AMR to bring to market advanced audio products.

Full product info: <http://ifi-audio.com/>

High-resolution photos & official logos: <http://mediaportal.ifi-audio.com/>

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