

ifi



XDS DSD  
GRYPHON

Tech Lowdown

# Ultra-resolution Portable DAC & High-power Headphone Amplifier

The xDSD Gryphon is for the serious music lover/headphone user who desires its unique combination of facilities and performance.

It combines the functionality and technology of not only the renowned xDSD but also the xCAN, enhanced and re-engineered across the board to create the most comprehensively equipped portable DAC/headphone amp on the planet.



# A Hi-fi System in your Pocket

- State-of-the-Art, Ultra-Res digital technology
- Three dedicated stages – Bluetooth, DAC and amplifier - optimized for max performance
- PureWave analogue technology



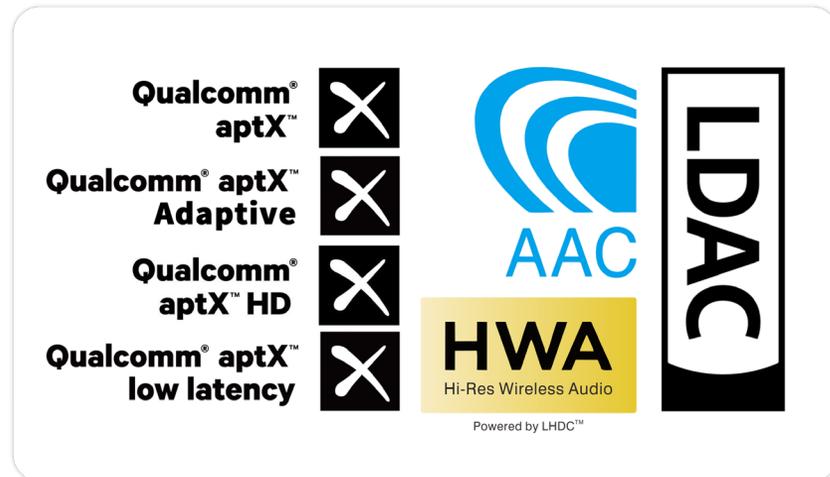
# Ultra-Res DAC/Amp

- Ultra-res PCM up to 32-bit/768kHz via USB (192kHz via optical/coaxial)
- Native playback up to DSD512
- Full MQA decoding (up to 384kHz)



# Ultra-Res DAC/Amp

- Advanced 96kHz Bluetooth 5.1 +module with QCCS100 chipset
- Supports HD Bluetooth formats including aptX HD, aptX Adaptive, LDAC and HWA/LHDC



# Audio Format LEDs



PCM 768/705.6/384/352.8/192/176.4/96/88.2kHz



PCM DSD 512/256



Original Sample Rate (MQB)



PCM 48/44.1kHz



MQA



DSD 128/64



MQA Studio

# Input LEDs



Line (Balanced 4.4mm/S-E 3.5mm)



USB



S/PDIF



Bluetooth

# Volume LEDs



-2 to +6 dB  
100%-92%



-20 to -3 dB  
91%-74%



-38 to -21 dB  
73%-56%



-56 to -39 dB  
55%-38%



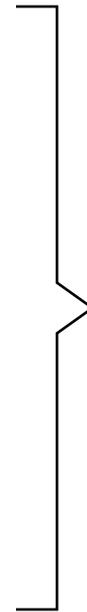
-95 to -57 dB  
37%-0%



Mute

# Multi-function Knob

- Power ON/OFF  
long press 3s
- Analogue volume control  
turn
- Mute/Unmute  
a short press
- Menu settings  
long press item 9 Settings button (1s).  
Control menu refer to item 9

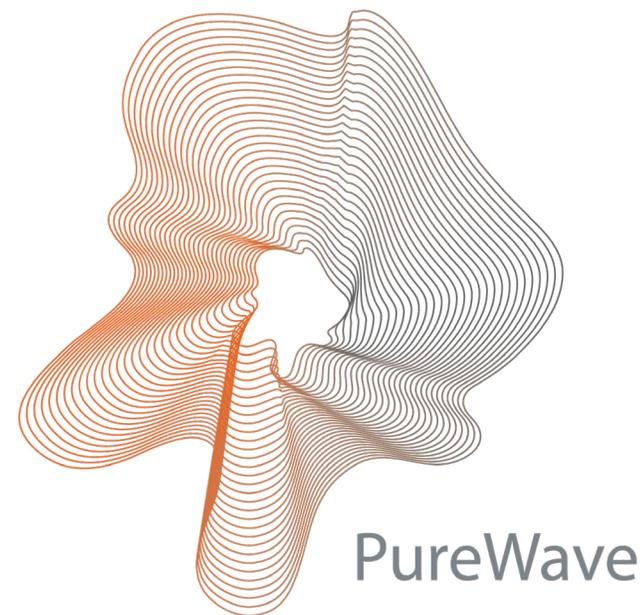


# Purewave Balanced Circuit Design

PureWave is the name we have given to the advanced, symmetrical dual-mono circuit topologies found in our latest premium-level devices, such as the NEO and Diablo DAC/amps.

The name refers to the sonic purity these designs achieve, thanks to exceptional linearity and infinitesimally low levels of noise and distortion.

The xDSD Gryphon is the smallest and most affordable device to feature PureWave design.



# OptimaLoop

'Negative feedback' is used in amplifier circuits to compare the output signal with the input signal and correct errors, in order to control gain and reduce distortion.

For sound quality, this is positive but a one-size-fits-all approach to 'global negative feedback' can highlight different problems whilst solving others – corruption of the error signal, phase shifts, group delay. These have a negative impact on sound quality.

Different parts of a circuit benefit from specifically optimised feedback loops, so we have developed a negative feedback system that is much more accurate than the usual approach.

This incorporates multiple feedback paths instead of one global loop, each path optimised for a particular function and working synergistically with the others to deliver optimal overall performance. We call this new configuration OptimaLoop.



# Unique Sonic Tailoring

Tailor sound to suit your headphones and personal sonic taste.



## **Analogue bass boost.**

Enhances low frequencies without muddying the mid-range.

It 'adds back' lost bass response for more accurate reproduction of the original music.



## **Analogue headphone spatialiser.**

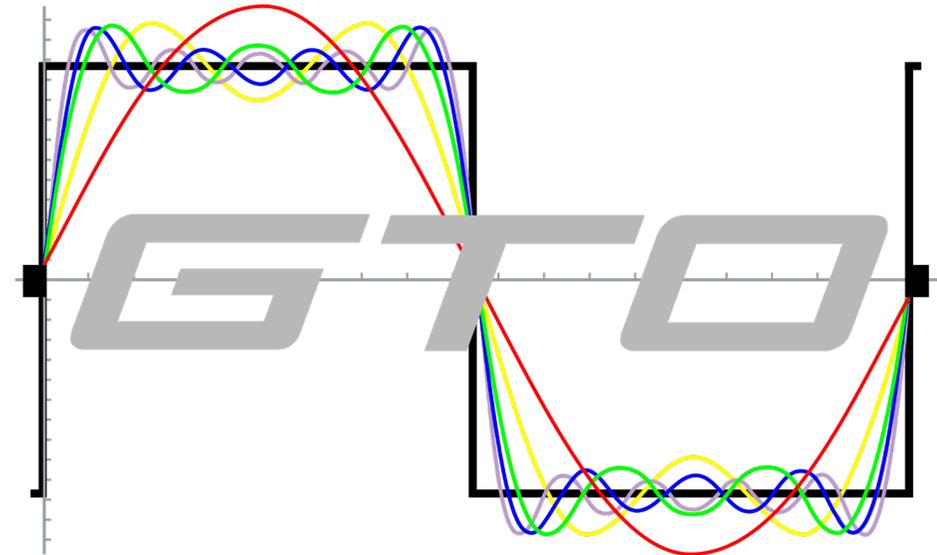
Opens up your music to give you the spaciousness of a live concert.

It recreates a holographic sound field. The purely analogue signal processing circuit is designed for listening to headphones as if you were listening to speakers.

# Digital Filtering

The xDSD Gryphon features three digital filters:

- BP – Bit Perfect, no digital filtering
- GTO – Upsampled to 384/352kHz, minimum filtering, no pre-ringing and minimum post ringing
- STD – Modest filtering, modest pre and posting ringing



# Built in iEMatch

- The xDSD Gryphon also has a built in iEMatch.
- With the iEMatch even the most sensitive In-Ear-Monitors (IEMs) can be matched to the xDSD Gryphon



# Connection Guide



**Output 3.5mm**  
S-Balanced



**Output 4.4mm**  
Balanced



**Selector**  
Input/Bluetooth Pairing



**USB-C Charging**  
DC 5V Input



**USB-C Input**  
PC, Phone, HDD



**S/PDIF Input**  
Digital



**4.4 Input**  
Balanced



**3.5 Input**  
Single-Ended

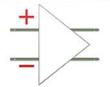
**muRata**

INNOVATOR IN ELECTRONICS

Murata Low-ESR high Q multilayer capacitor

Perfecting the Art of Electronics  
**ALPS**

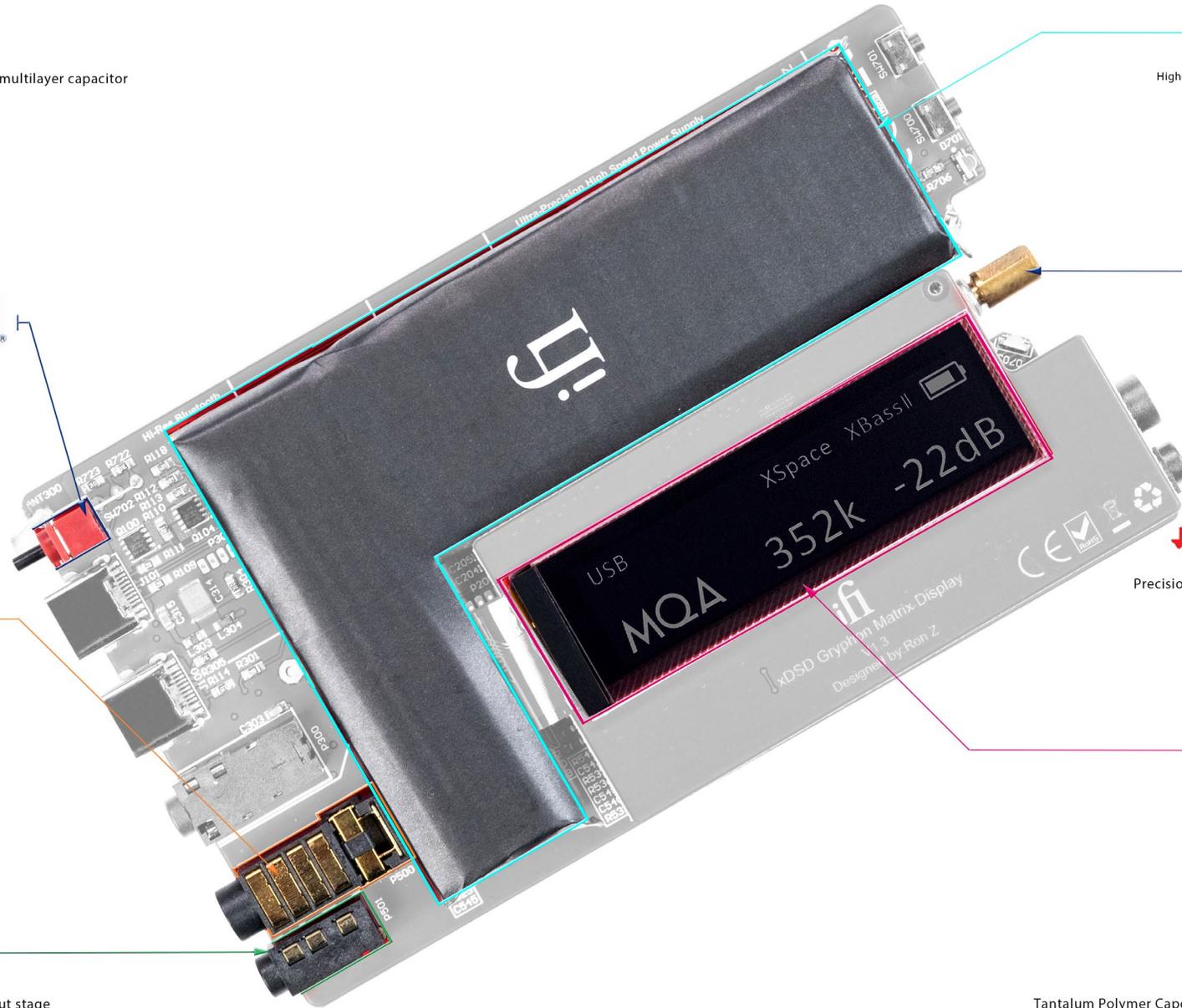
Balanced



4.4mm Balanced circuit

Balanced  
Performance

3.5mm S-Balanced output stage



High-density Lithium-polymer Battery



Precision digital interface  
analogue volume control

**TEXAS  
INSTRUMENTS**

Precision low-noise power supply



OLED Display

**KEMET**  
CHARGED

Tantalum Polymer Capor Itra-low noise/distortion

## Panasonic ECPU

Panasonic film capacitors



Stepped attenuator IC: W990VST



COG capacitors

For audio use with extremely low distortion



ifi operational amplifier,  
high-performance,  
low-noise OV2637 and 4627



Fully MQA Decoding  
Xmos 16-Core controller with  
ifi optimised firmware



Qualcomm 5100 series Bluetooth chip  
Bluetooth5.0®(aptX, aptX HD, aptX Adaptive, aptX LL,  
LDAC, HWA/LHDC, AAC and SBC)



Murata Low-ESR high Q multilayer capacitor



Headphone Buffer



Burr-Brown Products  
from Texas Instruments  
Burr-Brown Native DSD DAC



Ultra-low noise bi-polar  
input transistors



Precision low-noise power supply



Ultra-low Jitter Audio Stage Oscillator



Tantalum Polymer Capor Itra-low noise/distortion

# Specifications

|         |   |   |
|---------|---|---|
| Inputs  | USB -C  |   |
|         | Bluetooth 5.1 (aptX, aptX HD, aptX Adaptive, aptX LL, LDAC, HWA, AAC and SBC Codec) |   |
|         | S-PDIF Coaxial  |   |
|         | Balanced 4.4mm  |   |
|         | Single-Ended 3.5mm  |   |
| Formats | DSD   | DSD512/256/128/64, Octa/Quad/Double/Single-Speed  |
|         | PCM   | 768/705.6/384/352.8/192/176.4/ 96/88.2/48/44.1kHz |
|         | DXD   | 768/705.6/384/352.8kHz, Double/Single-Speed DXD   |
|         | MQA   | 384/352.8kHz                                      |
|         | Bluetooth   | Up to 96kHz                                       |
| DAC     | Bit-Perfect DSD & DXD DAC by Burr Brown   |   |

|              |   |
|--------------|---|
| Battery      | USB -C  |
| Power System | Charging via USB-C, BC V1.2 compliant up to 1900mA charging current |
| Dimensions   | 123 x 75 x19 mm   |
|              | 4.8" x 3.0" x 0.7"  |
| Weight       | 215 g   |
|              | 0.5 lbs   |

# Specifications

| Line Section     |          |                                    |
|------------------|----------|------------------------------------|
| Outputs          | Balanced | 6.7V max. (variable)               |
|                  | UnBAL    | 3.5V max. (variable)               |
| Output Impedance | Balanced | $\leq 200\Omega$                   |
|                  | UnBAL    | $\leq 100\Omega$                   |
| SNR              | Balanced | $< 110\text{dB(A)} @ 0\text{dBFS}$ |
|                  | UnBAL    | $< 110\text{dB(A)} @ 0\text{dBFS}$ |
| THD+N            | Balanced | $< 0.007\% @ 0\text{dBFS}$         |
|                  | UnBAL    | $< 0.015\% @ 0\text{dBFS}$         |

| Headphone Section |                                    |  |
|-------------------|------------------------------------|--|
| Outputs           | Balanced                           | 6.7V max. @ $600\Omega$                                      |
|                   | UnBAL                              | 3.5V max. @ $600\Omega$                                      |
| Output Power      | Balanced                           | $> 1000\text{mW} @ 32\Omega;$<br>$> 74\text{mW} @ 600\Omega$ |
|                   | UnBAL                              | $> 320\text{mW} @ 32\Omega;$<br>$> 40\text{mW} @ 300\Omega$  |
| Output Impedance  | Balanced                           | $< 1\Omega$  |
|                   | UnBAL                              | $< 1\Omega$  |
| SNR               | Balanced                           | $< 116\text{dB(A)} @ 0\text{dBFS}$                           |
|                   | UnBAL                              | $< 115\text{dB(A)} @ 0\text{dBFS}$                           |
| THD+N             | $< 0.005\% (1\text{V} @ 16\Omega)$ |  |

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