



ZEN Blue

The ZEN Blue – the world's first Bluetooth receiver to support all the latest hi-res codecs to deliver the best-quality music streaming from smartphones, tablets, PCs and Macs to any audio system.



This product guide provides information on the iFi audio ZEN Blue for purchasers, resellers and reviewers.

ZEN Blue

The introduction

At iFi we are kicking off a new range of high-quality, super-affordable, desktop-sized audio products with the ZEN Blue – the world’s first Bluetooth receiver supporting all the latest hi-res codecs for the best-quality music streaming from smartphones, tablets, PCs and Macs to any audio system.

The ZEN Blue immediately impresses with its sturdy aluminium enclosure, unusual at such a low price. But what really sets it apart is the circuitry within – as always, we’ve gone to great lengths to ensure that the sound quality over Bluetooth is the best it can be, even if it has to be designed from the ground up.

The retail cost of the ZEN Blue is US\$129 (ex tax) or €149/£129 (inc. VAT.)





The benefits

- Improve the sound quality of your music with the ZEN Blue simply and easily.
- Control your music via Bluetooth® with your favourite music app and relax.
- The ZEN Blue supports Bluetooth® in all current and future formats. Every possible source device is covered, at the highest resolution its Bluetooth audio specification will allow.
- Plus, with added iFi tweaks, you don't get the normal drop in quality often found in other Bluetooth products. See page 4.
- Supports up to seven Bluetooth devices.
- Balanced - the ZEN Blue's analogue output stage is a balanced design. The balanced design means less interference and cross talk. It has RCA and balanced outputs at HiFi standard level; 2V SE and 4V BAL and thus is compatible with both HiFi and Pro systems.
- With the ZEN Blue you can reap the benefits of both analogue and digital connections.
- Analogue - connect via RCA to an amp or active speakers or via 4.4mm output to amp/speakers with a balanced output.
- Digital - use the optical and coaxial connections to connect to anything with a built in DAC and corresponding digital input; your TV, an AV amp or external DAC in your hi-fi set-up.

The technologies – Breathtaking Bluetooth



The manner in which Bluetooth is implemented – the quality of signal processing and the circuitry that surrounds it – has a big impact on performance. Not all Bluetooth sounds the same, and at iFi we engineer our products to obtain the best possible performance from every audio source – Bluetooth streaming included.

All the latest 24-bit-capable Bluetooth audio formats are supported, including Qualcomm’s aptX Adaptive and aptX HD, Sony’s LDAC and Huawei’s HWA – no other Bluetooth streamer boasts this cutting-edge hi-res specification. Other codecs covered include regular aptX and aptX Low Latency, AAC (the favoured format of Apple iOS devices) and SBC (the ‘plain vanilla’ Bluetooth codec). This means that every possible source device is covered at the highest audio resolution its Bluetooth specification allows.

The technologies – Breathtaking Bluetooth



The LED at the centre of the ZEN Blue's front panel changes colour to identify the Bluetooth codec being received, while another LED to the right indicates the sample rate. Qualcomm's QCC5100 chip can be updated over-the-air, enabling future Bluetooth codecs to be added to the ZEN Blue's specification.

The ZEN Blue 'remembers' up to seven paired Bluetooth source devices, making it easy to switch from one device to another, with impressive reception range thanks to the latest Bluetooth 5 specification. The DAC stage handles sampling rates well in excess of the maximum delivered by current hi-res Bluetooth formats – of the 24-bit-capable codecs, aptX Adaptive and aptX HD support up to 48kHz, while LDAC and HWA reach 96kHz.

The technologies – Upgraded implementation



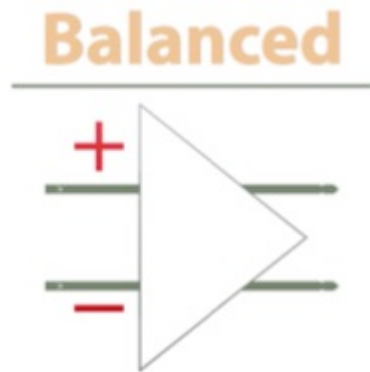
The iFi Bluetooth implementation begins with a state-of-the-art Qualcomm QCC5100 chip to process the incoming data – the ZEN Blue is the first product of its kind to benefit from this new-generation Bluetooth IC.

The Qualcomm QCC5100 offers a ‘system-on-a-chip’ Bluetooth solution, with all functions covered including D-to-A conversion. Many manufacturers would simply rely on this chip to deliver the DAC function, but this is not the iFi way.

The ZEN Blue has separate digital and analogue stages. To feed the analogue stage, the processed digital signal is routed from the QCC5100 to a specialised DAC chip from ESS Technology’s Sabre family to convert the signal from digital to analogue.

One of the key advantages of the ESS Sabre DAC chip is its Hyperstream architecture with integrated Time Domain Jitter Eliminator, which helps to deliver vanishingly low distortion and high dynamic range. We’ve found that this allies perfectly with the Qualcomm chip to deliver Bluetooth audio that sounds far better than the norm.

The technologies – Perfectly Balanced



None of this would mean much if the rest of the ZEN Blue's circuitry were not up to scratch. This is the first iFi product to benefit from the input of legendary audio designer John Curl, who has teamed up with the our electronics design team, led by Technical Director Thorsten Loesch, to ensure the circuit design of every product is fully optimised.

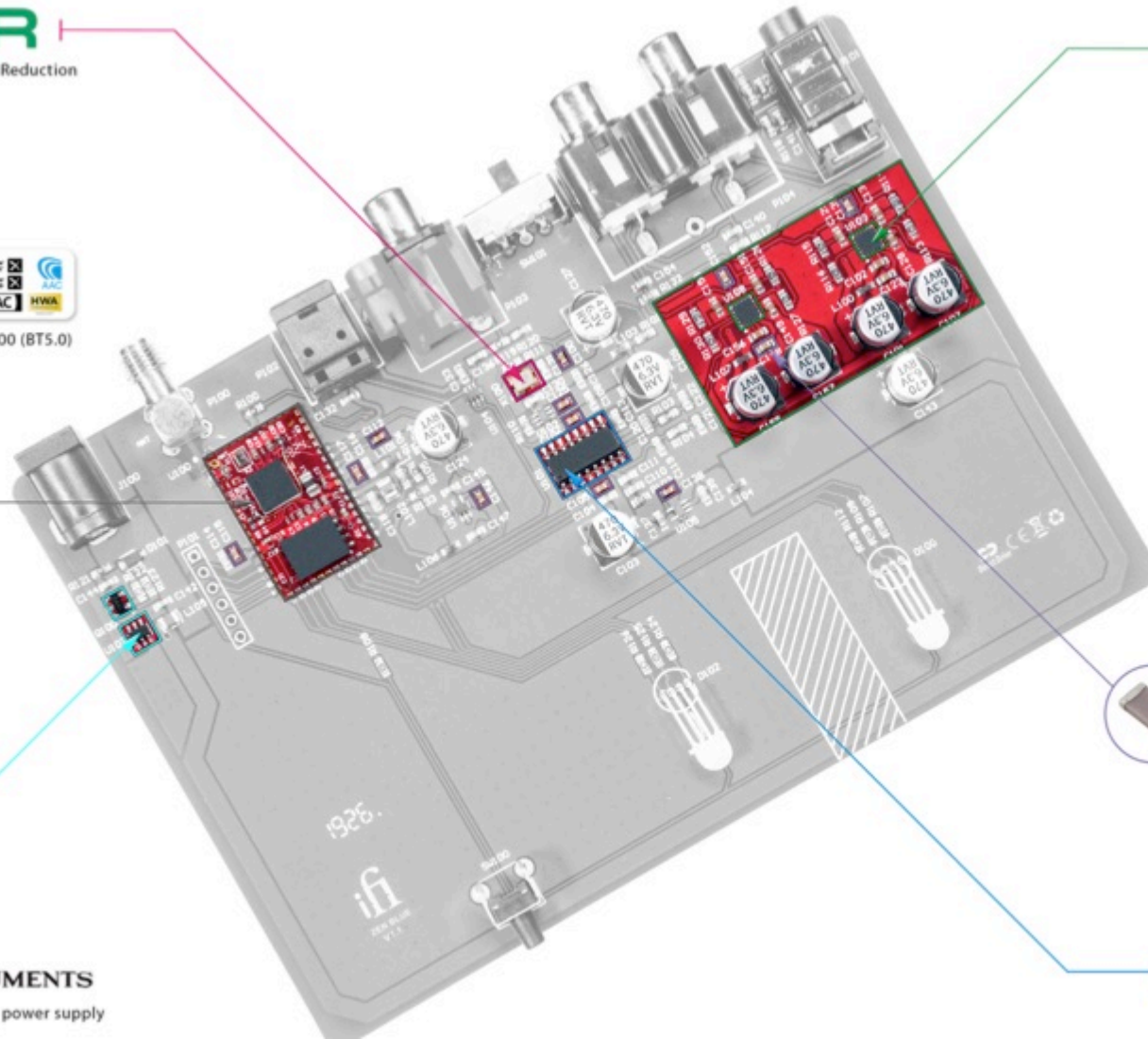
The ZEN Blue's analogue output stage is a balanced design – highly unusual in a DAC anywhere near this price point. The balanced design means less interference and cross talk.

It incorporates a range of high-quality circuit components, carefully selected for their performance in an audio context, including professional-grade balanced line drivers, COG capacitors from TDK and a precision low-noise power supply IC from Texas Instruments. See the diagram on the next page.

TDJR
Time Domain Jitter Reduction

QUALCOMM
QCC5100
LDAC HWA
Qualcomm® QCC5100 (BT5.0)

TEXAS INSTRUMENTS
Precision low-noise power supply



Balanced
+
-
Balanced output stage

TDK
COG capacitors

ES9028
SABRE DAC

The technologies – Best of both worlds



The ZEN Blue adds high-quality Bluetooth reception to any audio system via analogue or digital cable connections. A switch at the back dictates how the digital signal is routed; either through the DAC and analogue output stage, or directly to the digital outputs.

On the analogue side, RCA stereo outputs allow connection to amplifiers, active speakers and the like, while a 4.4mm Pentaconn output enables balanced signal transfer to amps/speakers equipped with a balanced input – either a 4.4mm input, or XLR inputs via a 4.4mm-to-XLR cable. For digital connections, optical and coaxial outputs are provided – these allow connection to anything with a built-in DAC and corresponding digital input, such as an AV amp or an external hi-fi DAC.

Features

- Bluetooth receiver (aptx, aptX HD, LDAC, HWA, AAC and SBC) up to 24/192
- Analogue outputs: Balanced 4.4mm / Single-Ended RCA
- Digital outputs: Coax / Optical (S/PDIF)

Specifications

Power:	DC 5V
Input:	Bluetooth 5.0TM with AAC, aptX, aptX HD, AptX Adaptive, LDAC, HWA Codec
Output:	Optical/Coaxial, Audio RCA L/R, 4.4 Balanced Lineout
Frequency Response:	20Hz - 20kHz $\pm 0/-0.5$ dB (44.1kHz) 1Hz - 44kHz $\pm 0/-3.0$ dB (≥ 88.2 kHz)
Output Voltage @ 0dBFS:	2.05V (+/-0.05V)
Dynamic Range:	109dB (A)
Signal/Noise ratio:	109dB (A) @ 0dBFS
THD & N @ 0dBFS:	< 0.0015% 10k Load
Output Impedance:	< 50 Ω
Power Consumption:	< 2.5W
Dimensions:	158 (l) x 100 (w) x 35 (h) mm
Weight:	476g (1.05 lbs)





About us

iFi was born in 2012 with one goal in mind: to produce 'ultra-fidelity' audio products that push the sonic envelope - whilst still priced within the mainstream.

iFi audio is under our parent company, AMR, Abbingdon Music Research, which designs and produces top-end luxurious audio products. AMR saw in 2010 that customer demand for wireless and portable headphones was expanding as the whole audio dynamic was changing. Thus, iFi was launched.

iFi offers small but prodigious personal audio products thanks to the superior knowledge of AMR's technology. Today, we are proud of our British (and international) roots. We continue to design and manufacture over 35 different products. We are headquartered in Southport, UK with distribution including retailers such as B&H and etailz with production overseas.

We source parts from around the world from manufacturers including AMOS (UK), GE Valves (USA), WIMA (Germany) and TDK (Japan).

High-resolution photos & official logos: <https://media.ifi-audio.com/portfolio/zen-blue/>

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