



# WITH THE BEETLE

Tiny, and weighing just a few grams, Audioquest's „Beetle“ bluetooth DAC is further proof that the cable manufacturer has become a serious digital specialist

**A**udioquest, led by quiet mastermind Bill Low, has for decades been one of the hi-fi market's leading suppliers of quality cables at moderate prices. What's more, the catalogue from the Irvine, California company also has wires likely to be confused with an anaconda, such is their thickness, at prices ranging up into luxury watch territory.

However, of late times have become harder for cable manufacturers. Not only is their an ever-growing number of suppliers of connection products, meaning the cake must be more minutely divided, but for years now a specter has been haunting the hi-fi accessory business – wireless connectivity. For a cable manufacturer, this can only be seen as a threat to one's own existence – wireless means no wire!

Reacting to this, Low decided to pursue a strategy of diversification, deciding to gain a foothold with his products in other areas of the hi-fi chain. The first step was the engagement of specialists in different fields: several software and hardware developers for digital audio were engaged, as well as the young engineer Skylar Gray, who took up the topic of headphones from scratch. In the area of power supply/electricity purification, Low was also able to bring into his team Garth Powell, one of the world's most recognized specialists in this field.

## Simple handling

Among the first fruits of this policy were the little 'USB stick' Dragonfly DAC/headphone amp; now comes the – only slightly – larger Beetle, for which an important development criterion was to

Audioquest has the right connection for every conceivable application. ►



make it usable without long study of the operating instructions. So, to see whether that objective has been achieved, we ignored the information supplied, unpacked the Beetle and looked at what could be done with it.

And it's simple: the selected function is indicated by an LED, which lights up in different colors, while the optical Toslink input promises to enhance the sound of a CD or DVD player – or any kind of digital device a suitable output, which nowadays includes many TVs. So far, so normal, but the Beetle has even more to offer: if you own a computer, it can be connected using the USB Type B input, with data processing then controlled by the DAC's internal clock, rather than that of the sending device – in other words 'asynchronous data transfer'.

The digital section itself has also been tuned in-house: at the heart of the Beetle is the familiar ESS Sabre 9010 chipset, but with a digital filter been trimmed to minimize phase errors for the most precise spatial reproduction possible, while the digital volume control is of a 64-bit, bit-perfect design.

### Beetle receives Bluetooth

That volume controls is available with both USB and Bluetooth inputs, and Audioquest has given the Beetle a software-upgradable asynchronous Bluetooth implementation, with the promise of improved speech intelligibility and reduced jitter even at a maximum 320kbps data-rate.

The power supply unit use a classic analog transformer instead of a cheap switching power supply, another sign of the obsession with detail of the Irvine engineers, and the sound of the Beetle can be further improved with the insertion of the €49 Jitterbug in the USB line. However, true to its roots Audioquest might suggest a better USB cable might minimize losses in the sound – one of its entry-level models will cost you about €29.

The Beetle finds makes its wireless connection in a few moments, with no obvious bugs (sorry!), and even an experiment in sending YouTube soundtracks from computer to an old tape deck was a success right away. A more common application will be connecting music on a mobile phone to a

hi-fi system, and this D/A converter, weighing only a few grams, more than fulfils this task.

True, the sound might not satisfy a 'golden-ear' as the last word in digital audio quality, but when it comes to price, sound and flexibility, it's hard not to conclude that this Beetle offers excellent value for money.

*Michael Lang*

#### KEYWORD

**Bitstream processing:** Unlike PCM formats in which data is bundled into packets, DSD runs in a constant, unstructured datastream, where all bits are equivalent.



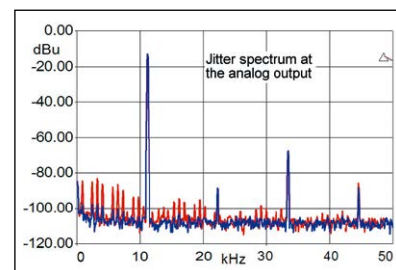
▲ Toslink and USB digital inputs are joined by a 3.5mm analog output to connect to headphones, active speakers, amplifiers or a sound bar

### AUDIOQUEST BEETLE

for 200 €  
 Warranty: 2 years  
 Contact: Audioquest  
 Phone: +31 165 54 1404  
 www.audioquest.com

Converter with USB and Toslink connection, as well as asynchronous Bluetooth from a source such as a mobile phone or computer. 3.5mm stereo analog output. MQA compatibility via a future firmware update.

#### MEASUREMENT RESULTS



**LABORATORY COMMENT:** The measurement results are very good to excellent, only the overload resistance in Toslink mode can lead to distortion in extreme cases.

#### CONNECTIVITY

USB-B input, asynchronous, up to 24/96, without driver; Toslink input, 3.5 mm jack input; Bluetooth receiver; analog power supply

#### STEREO-TEST

SOUND QUALITY **72%**

PRICE/PERFORMANCE

★★★★☆  
**EXCELLENT**