



# Acoustics

A7 is the ultimate wireless music system. This is down to attention to detail in the science of acoustics, as well as smart implementation of audiophile-grade electronics. This manifests itself in a combination of sensible implementation of core Bowers & Wilkins technologies, many of which were originally designed for our custom install and high-end loudspeaker ranges and bespoke A7 developments.

## **Nautilus™ Tapering Tubes**

Not all sound generated by speaker drive units is good sound. The kind that emerges from the back of a driver, into a conventional box cabinet, can bounce around and make a mess of the good sound coming out of the front. By using the tube loaded tweeters first designed for our flagship Nautilus™ loudspeaker, rear reflections are fully absorbed to ensure pure high frequencies.

## **Drive units**

A7 uses the same drive units as Zeppelin Air, Panorama and MM-1. These drive units provide excellent dispersion, for natural and wide sound.

## **Copper pole caps**

A copper pole cap has been introduced to reduce the losses associated with inductance rise of the voice coil, improving mid to high frequencies.

## **Speaker basket**

Sound radiates from the rear of a drive unit as well as the front. For most applications this is undesirable as the rear sound adds colouration when it reflects off the speaker basket. By using a speaker basket with increased open area, rear sound reflections are minimized. Additionally, the air pressure behind the diaphragm is distributed more evenly, which prevents rocking of the diaphragm and voice coil components. The result of this reduction in rear sound reflections and the more uniform speaker movement is the dramatic reduction of associated coloration.

## **6inch woofer**

Having a larger acoustic volume has allowed us to use a 6inch woofer in A7. The cone is made from Kevlar™-reinforced paper pulp, to increase its stiffness and damping. A progressive roll spider with low-loss suspension provides linear and controlled movement, ensuring low frequencies are always accurate.

## **Flowport™**

A7 also incorporates Bowers & Wilkins Flowport™ technology. The dimpled holes around the port reduce air turbulence in the same way as a golf ball. The ports are ultra silent so the bass is clean at all listening levels.



# Audiophile electronics

## **Amplifiers**

A7 is a fully active 2.1 design. All five drive units are individually driven by dedicated bespoke audiophile class D amplifiers. The 4x25 Watts plus 1x50 Watts output powers the improved drive units for increased precision, seamless integration and impressive levels of bass attack.

## **Digital Signal Processing**

For many compact speakers, when played at high volume levels, the sound becomes unlistenable and incoherent. A7 takes a clever approach by applying proprietary Digital Signal

Processing. A7 monitors and analyses the audio signal at every sample and intelligently optimises the system to ensure controlled bass output and room filling sound at all listening levels.

## **Audiophile DAC**

In the digital world, the Digital to Analogue Converters (DACs) are vital for getting the best from high-quality drive units. On A7 all inputs are up-sampled through the audiophile-quality 96kHz/24bit DAC. This has the effect of reducing noise and increasing dynamic range, creating a more detailed, natural sound.



# Design

## **Build quality**

A7's audio electronics and acoustic components are capable of generating a lot of sound output. To ensure that the enclosure does not rattle or buzz, great attention and thought has been applied to the design. Not only has the enclosure been made from glass re-enforced ABS, extra strengthening ribs have been included to limit and control undesirable resonances.

The end result is the ultimate wireless music speaker, capable of producing room filling, high-quality audio.



Bowers & Wilkins

[www.bowers-wilkins.com](http://www.bowers-wilkins.com)

Kevlar is a registered trademark of Dupont.  
Nautilus and Flowport are trademarks of  
B&W Group Ltd. E&OE B&W Group Ltd.  
Copyright © 2012