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Issue No. **400**

August 2015

Fantastic Phantom

Is Devialet's modular
system the future of hi-fi?



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Phantom power

With space-age looks and futuristic tech that can be seen as well as heard, **Andrew Simpson** checks out Devialet's new system

While all-in-one systems come in many shapes and sizes, generally they follow a similar set of conventions with smaller scale woofers, tweeters and amps packed together under the same roof, trading levels of sonic output for greater degrees of convenience. But as we saw with its Ensemble package last year (*HFC 386*), following conventions is not really the Devialet way. From the outset the distinctive Silver Phantom's egg-like case immediately challenges your

The first thing that hits you is the surprising scale of the Phantom's sonics

preconceptions of what a hi-fi system should look like. Each one houses its own internal amp, DAC, wi-fi streamer and speakers, allowing it to fly solo as a standalone system or work alongside more Phantoms as part of a two or more channel installation through Devialet's free Spark app and Dialog wi-fi controller (£249). There's also a dedicated remote control (£109) and Branch speaker stand (£199) due for release later this summer, followed by a wall mount and carry case. At £1,690 each, the Silver Phantom's higher £300 price tag gets you a full fat 3,000W internal amp in place of the standard Phantom's already substantial 750W variant.

While the Phantom packs plenty of cutting-edge tech within its wire-free internals, perhaps the most radical part of the package is its air-moving hardware, made up of no less than four drive units, which are cleverly incorporated into its smooth skin. These include the two opposing silver domes flanking each cheek, which act

as bass drivers fashioned from 0.4mm thick 5754-grade aluminium. As well as being light and rigid, this alloy is also strong, and it needs to be to withstand much higher pressures than your average woofers thanks to Devialet's HBI (Heart Bass Implosion) system (see box out on page 16).

The Phantom's HBI-powered 110mm curved white midrange ring that surrounds its tweeter in a coaxial arrangement is harder to spot. Formed from the same type of alloy as the speaker's bass drivers, it's actually 0.1mm thinner in a bid to reduce its moving mass. While the tweeter that sits at its core is a more conventional 25.4mm aluminium dome, recessed behind a fixed metal grille. Both the tweeter and midrange ring are angled upwards at 11.5°, to give a more even sound dispersion says Devialet, especially when combined with the Phantom's sphere-like shape.

The power behind these drivers comes from more proprietary Devialet technology, which begins with its internal amp that's built around the company's firmly established ADH

DETAILS

PRODUCT
Devialet Silver Phantom

ORIGIN
France

TYPE
Modular music system

WEIGHT
11kg

DIMENSIONS (WxHxD)
253 x 255 x 343 mm

FEATURES

- 3,000W internal ADH amplifier
- Internal DAC and wi-fi streaming up to 24-bit/192kHz
- Format support: MP3/AAC/ALAC/FLAC/WAV
- Ethernet and optical inputs
- Configurable for mono or stereo

DISTRIBUTOR
Devialet UK

WEBSITE
en.devialet.com

(Analogue Digital Hybrid) topology, which first put Devialet on the map back in 2010. This approach uses analogue Class A voltage amplification working in parallel with digital Class D current dumpers, blending the benefits of a Class A sound with Class D power. For the Phantom's dedicated ADH chip, the analogue stages of each core have been miniaturised, while four channels of ADH amplification allow the Phantom to remain compact yet extremely powerful. The Phantom's chip also incorporates Devialet's Magic Wire typology, which links the DAC (a Texas Instrument's PCM1798 24-bit/192kHz chip) to the amp while keeping noise and distortion to a minimum.

SAM in control

The final link in the chain comes courtesy of Devialet's SAM (Speaker Active Matching), which processes the audio signal in the digital domain ahead of the DAC and power amp, tailoring it to take into account the real-world characteristics of the drive units and their acoustic load across the volume range. What's more, SAM is applied to all of the Phantom's drivers and not just the bass units, as we saw in the Ensemble package.

Unboxing the Phantom you immediately notice just how solid and heavy it feels, weighing in at 11kg, but thanks to an inset rubber base plate it is very easy to site and won't budge when parked. Alongside an IEC mains inlet, physical inputs are limited to a single Ethernet port and S/PDIF (optical) socket. We've also specified a Dialog hub for our review so that we can run two Phantoms in stereo. This also adds a USB-A output alongside its own Ethernet and optical connections.

The composite body has an ABS/stainless steel shell with a glass fibre-filled polycarbonate internal skin and aluminium core



Getting the party started is largely done in the virtual domain (the Phantom's only physical control is an on/off button) and involves first connecting the Dialog to your router, before downloading the Spark app for desktop and tablet. With the speakers powered up, the app automatically finds them on your network at launch before asking you to touch them in turn to connect. You then need to identify them within a stereo or mono setup (5.1 and beyond is in the pipeline) by dragging and dropping into 'left', 'right' or 'solo' positions on the screen and watching their bass drivers flex in acknowledgement. You can control up to 24 Phantoms across identified rooms across your home.

Alongside the ability to stream music stored on devices in your network, Spark also integrates with streaming services including Deezer, Qobuz and Tidal with more set for the future as well as Bluetooth wireless.

To play, simply drag and drop albums or songs from selected sources into your central column on the desktop app, or hit the '+' icon on a handheld device. While the app is slick and intuitive, the volume slider can be a tad slow to operate via desktop (a virtual dial would be much

more responsive) and I'd also welcome more track info including file type, bit depth and sample rate, to identify the quality of the audio.

Sound quality

Despite its modest size, the first thing that hits you about the Phantom is the surprising scale of its sonics. Planted atop a pair of Custom Design FS 104 Signature speaker stands, positioned 2m apart and 70cm/150cm respectively from my listening room's side and rear walls, the pair of speakers is able to fill my generous 3.4m x 4.5m listening space with consummate ease.

Underpinning the sonic personality is the bass, and it's fair to say that Devialet has exceeded its objective of creating a presence on a much grander scale than a box of this size should allow by some margin. Testing the waters with a 16-bit/44.1kHz FLAC of Little Dragon's *Paris* via Tidal almost has me checking behind the sofa to see if a subwoofer has been installed while my back was turned, such is the unexpected depths that the bass reaches.

Equally impressive is the start/stop nature of the lower notes, which are controlled and without unnatural overhang. Taking this to the next

level with a 24/44 ALAC of London Grammar's *Hey Now* really gets the Phantom shifting some air, with its silver cheeks beating back and forth like wings as though the unit is preparing for lift off. Placing my hand on the casework with the music in full flight, however, reveals it to be firmly rooted to its stand. And despite the drive units getting a thorough workout that can be seen as well as heard, I can't detect any vibration bleeding into the casework. During listening sessions I regularly call on this track to aid bass tuning, as its lowest octaves can serve to highlight where natural bass extension ends and unnatural boom and/or cabinet resonance begins.

While the Phantom won't put up much of a fight at low volumes when placed close to walls, giving it as much breathing space as possible

You can control up to 24 Phantoms in identified rooms across your home

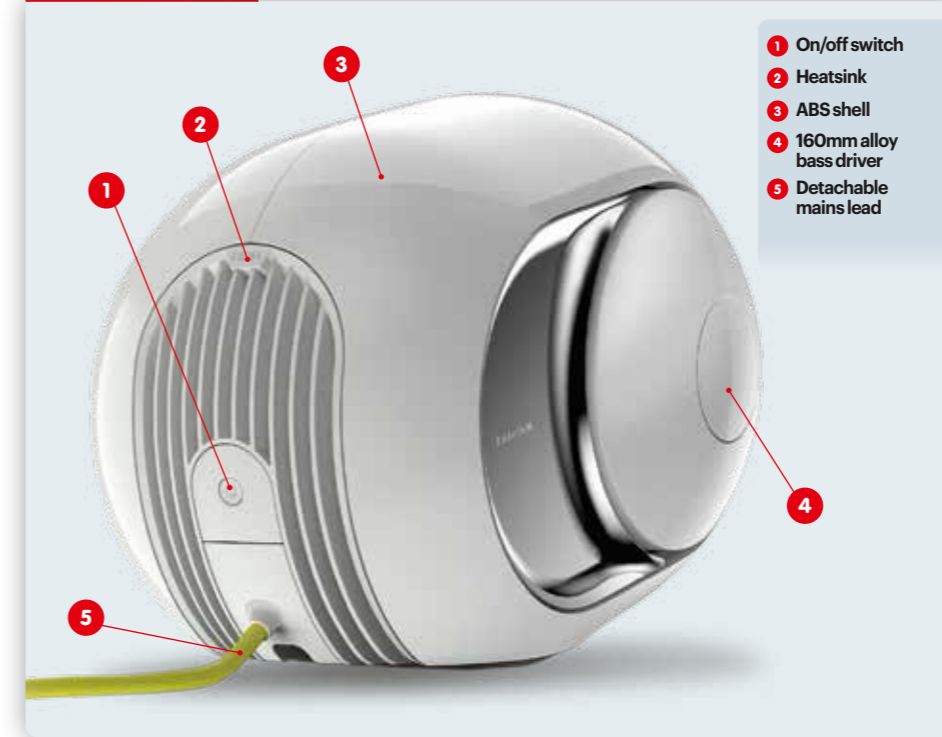
when winding the wick up pays dividends in terms of bass integration.

Moving on to a 16-bit/44kHz rip of Nick Cave's *Abattoir Blues*, the Phantom renders the hard-hitting piano notes with enough slam to take me by surprise. Each strike on the ivory keys hangs in the air with all the sinister weight Cave intended, underpinning his understated vocals, which sound dense and rich.

Despite the all-aluminium driver array – a material that can sound harsh when compared with soft dome tweeters and drivers made from non-metallic composites, the Phantom is smooth and free from bright edges, thus toeing it in slightly towards your listening position won't result in over-emphasised treble or sibilance. Having said that, the treble seems less sensitive compared with many speakers and I'm able to get the best out of it by firing the sound straight down the room, which really opens up the soundstage without sacrificing its focus.

Streaming a 16/44 ALAC rip of Björk's *Oceania* from *Medúlla*, allows her vocals and the accompanying beatbox backing to be projected around my listening space in a manner that's more akin to a top-spec omnidirectional speaker, than a traditional box design. There's a strong sense of the music not being pushed at you from a vertical plane, instead the soundstage is more three

CONNECTIONS



- 1 On/off switch
- 2 Heatsink
- 3 ABS shell
- 4 160mm alloy bass driver
- 5 Detachable mains lead

Q&A

Pierre-Emmanuel Calmel
CTO and Chairman, Devialet



AS: What was the biggest challenge you faced in creating the Phantom?

PEC: Firstly dealing with so many different areas of expertise and bringing them together to overcome obstacles around acoustics, mechanics, signal processing, software, hardware, design, manufacturing, you name it! The biggest challenge was to fit the equivalent of a huge high-end system into a very compact enclosure while still keeping prices as low as possible.

How have you achieved an extra 2,250W over the standard model?

It was another big challenge, especially when factoring in the speakers' thermal management. We use higher temperature grade woofer magnets, more efficient thermal material to extract heat to the heatsink and specific signal processing as well as SAM. The two look similar, but the component dimensioning changes significantly to produce 99dB or 105dB.

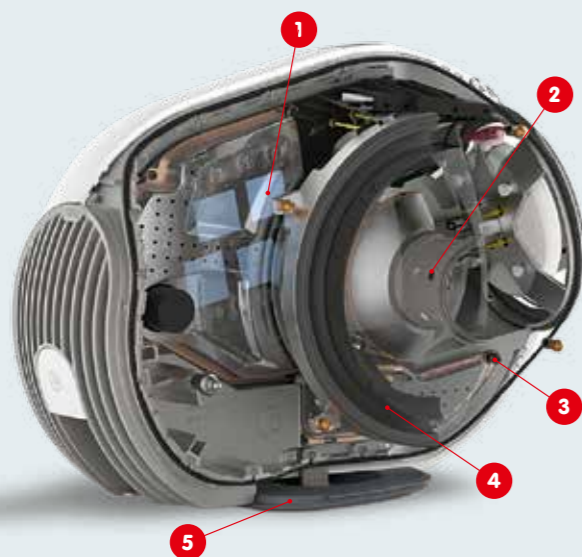
What's inspired the design?

It's firstly dictated by the laws of acoustics. The best possible shape is a small pulsating sphere and it's the reason why all transducers are designed to be co-spherical. With this in mind, the designers created a compact shape without any sharp edges to avoid diffraction, with polished side-plates inspired by our Expert range. The result is a beautiful sculpture, an intriguing piece of art that can stand in your living room as an inert object. And when the Phantom comes to life its woofers' fascinating movement is guaranteed to catch everyone's eye!

Are you considering creating a pocket device?

We've always been focussed on keeping our products compact, as you first saw with our amplifiers, likewise Phantom is incredibly small yet powerful. Pocket devices raise additional challenges, such as battery life and weight which require lots more R&D if you are not willing to compromise sound quality. One thing's certain, we love challenges!

IN SIGHT



- 1 DAC and miniaturised ADH core
- 2 Neodymium bass driver magnet
- 3 Micro-processor for Spark app
- 4 Woofer enclosure gasket
- 5 Rubber foot

HEART BASS IMPLOSION

To achieve bass levels usually associated with much larger box designs, Devialet's designers have gone back to the speaker design drawing board. Instead of using a vented or more traditional sealed box, HBI works by using a sealed chamber behind each drive unit combined with a strong woofer and diaphragm with an

unusually long-throw capability, married to a very powerful amplifier. To create this technology, Devialet turned to experts from the automotive, micromechanics and pro-audio arenas. The Phantom's resulting bass drivers are intentionally opposed to reduce vibration and can generate and resist huge pressure and vacuum levels

within their 3L chambers, which accounts for their whopping 26mm of travel peak to peak. The maximum air pressure inside the enclosure is 20 times higher than that of a conventional speaker box, which is an acoustic pressure level that's more associated with a rocket launch than a hi-fi speaker!

dimensional, filling all corners of my room, which when combined with the smooth treble makes it appear less forward sounding than many, without trading clarity or imaging.

Conclusion

Despite the lifestyle branding, the Silver Phantom is a genuine hi-fi proposition that's firmly rooted in high-end audio. What's more, as a complete music system that comes fully loaded with Devialet's latest technology and wi-fi streaming to boot, it's also exceptional value, especially given you could start with a single unit and add a second Phantom as funds permit. And pair them up you should, as being configured in stereo takes them up to the next level in the audio stakes, with a sound that's open, full bodied and blessed with a bass quantity and quality that really pushes the boundaries of what you'd expect from a compact system ●

HI-FIChoice

OUR VERDICT

SOUND QUALITY

★★★★★

LIKE: Superb build; high-end sound with genuine bass

VALUE FOR MONEY

★★★★★

DISLIKE: Lack of analogue input

BUILD QUALITY

★★★★★

WE SAY: Cutting-edge versatile system offering class-leading technology and features and at a sensible price

FEATURES

★★★★★

OVERALL

★★★★★

HOW IT COMPARES

At £895, Naim's one-box mu-so (HFC 391) offers a range of streaming options including aptX, AirPlay and UPnP alongside digital and analogue inputs, outputted through a Class D amp and dual three-way internal speaker system. The mu-so images well for a compact unit, albeit on a smaller scale than that of the Phantoms. For a more full-sized stereo experience, look to Dynaudio's active Xeo range starting at £1,775 for the standmount Xeo 4, or £2,925 for the Xeo 6 tower (HFC 388). Both feature inbuilt Class D amps, room EQ settings and wireless streaming via a lightweight hub, and include analogue inputs.