

Magico A1

More than a chip off the Magico block, the A1 sets the standard for pint-sized standmounts
 Review: Paul Miller Lab: Keith Howard

Chalk and cheese. Night and day. Or perhaps David and Goliath... Call it what you will, but the transition between Avantgarde's huge, horn-loaded Duo Primo XD's [p36] departing my listening room, and the diminutive A1s arriving, demanded a recalibration of reality. Just 20kg versus 185kg per enclosure and a drop of 20dB in sensitivity – so the volume control on our resident dCS Vivaldi One DAC/preamp also needed a reset from 500mV output to 6V.

In truth, Alon Wolf, Magico's CEO and guiding light, is partial to high-end horns himself, as the brand's all-alloy, all-active, five-way Ultimate served to illustrate. This statement piece is now discontinued, but those who experienced the Ultimate will not easily forget its 'presence'. Yet this review is devoted to another all-aluminium speaker that's arguably closer to Magico's core design ideals and, at 395x216x268mm (hwd), also somewhat more practical to unpack, install and enjoy.

HIGH-END GATEWAY

This small but dense little loudspeaker marks the gateway to Magico's A-series and to the brand as a whole. It was inspired by the Q1 standmount (the Q7 floorstander and partnering subs are the only Qs still in production) but at a fiver under ten grand, is rather more accessible than its £35,000 mentor. The latter did come with a matching stand while the A1 is supplied with four turned alloy feet and mere suggestions of specialist stands or desktop plinths you might consider. For the purposes of my listening, I used a set of lead shot and sand-filled Partingtons that are nearly as old as my career in hi-fi, but they are no less sturdy now than they were over 35 years ago. Unlike me...

All Magico designs are infinite baffle/sealed box types, but the absence of a reflex port in this compact enclosure not only improves its transient behaviour but also ensures it's all but agnostic about room

positioning. Furthermore, while the A1 is the most affordable Magico, it's not lacking in sophistication or stripped of all the brand's signature features.

Nevertheless, to achieve the necessary economy of scale, the A series is not built in-house but at an approved facility with significantly greater anodising, grinding and CNC capacity. Wherever they are built – 'not California' says Alon Wolf – the standard of construction and finish remains truly exceptional.

The A1's cabinet is not a tubular extrusion but comprises six machined aluminium panels bolted together from within (the final panel affixed through the baffle before the mid/bass driver is installed). These are 9.5mm-thick slabs of 6061 T6 'aircraft grade' aluminium braced and reinforced by three additional aluminium sections connected to the top and bottom panels and midway up the enclosure. These extra panels are clearly visible in the cutaway shot [p61].

Magico's costlier enclosures employ constrained-layer damping – a sandwich of aluminium and a lossy polymer layer that converts vibration to heat. As one concession to cost, none of the A series has these layers, but with panel sizes as small and (relatively) thick as the A1, any such additional damping is rather less critical.

The A1's drivers and crossover [see boxout, p61] are all culled from Magico's development of its costlier ranges. That extremely lightweight and rigid beryllium tweeter – shared across the A1, A3 and forthcoming A5 – uses the same 28mm



LEFT: The A1's sealed aluminium cabinet hosts a 28mm beryllium dome tweeter allied to a 165mm mid/bass unit. This composite carbon fibre cone includes a layer of 'XG Nanographene' to enhance its stiffness

any metal. Roll this sheet into a cylinder and you have a Graphene nanotube [see Opinion, HFN Sept '14].

A LITTLE MAGIC

All good little loudspeakers have the capacity to shrink further from view as the music takes over, but only the great ones, the Magico A1 included, positively *vanish*. So as the sound of Carman Lundy's voice filled the room [Self Portrait, rip from a JVC K2 CD; VICJ-5152] I knew I was in for a treat. Here the piano, percussion and string section blended in a way that was both insightful and subtle, every little twist of vocal and splash or brush of cymbal punctuated by ivory to exquisite effect.

Frankly, you know the moment you walk into a room where the Magico A1s are playing that these little boxes are something special. Not in-your-face special but offering such an easy-going, open and relaxed sound, infused with details large and small, that you are immediately put in the mood for a long and immersive listen.

In this instance, the A1s were aided and abetted by the pair of Constellation Inspiration Monos still in residence – the high value point of the Constellation family [HFN Oct '19]. At audio shows around the world, including our own Hi-Fi Show Live at Ascot, there's a good reason for Magico loudspeakers typically being accompanied by a Constellation amp. They are one of high-end audio's symbiotic pairings.

MEN IN TIGHTS

That's not to say the A1s are amplifier-fussy, beyond their limited sensitivity [see KH's Lab Report, p63], because they are not. Team them up with any solid amp – I had models from Simaudio (p42), Audio Analogue and Audio Research to hand – and they sing just as sweetly, all the while

telling you much about the colour and dynamic potential of the system as a whole.

As a rule, the A1s will vividly open up the music at hand, including what are ostensibly tough, dense mixes like Mike Oldfield's 'Taurus II' [from the deluxe edition of *Five Miles Out*, Universal Music/Mercury]. The sound of the Uilleann pipes and Maggie Reilly's atmospheric vocals almost

always sound stunning on a half-decent system but, as Oldfield spasms between splices of jazz-rock, fusion and ye olde

dome as the high frequency drivers in its M-series, albeit without the 'diamond coating'. The motor system is slightly simpler, but is still based on a neodymium magnet assembly and 28mm voice coil, and the driver as whole is now loaded into an improved absorptive rear chamber.

GRAPHENE GALORE

The 165mm bass/mid driver is specific to the A1. It employs an overhanging 39mm titanium voice coil equipped with a copper shorting ring (reducing coil inductance at HF), within a double-ferrite magnet system. However, the real star of the show is the composite design of the driver itself – a 'multi-wall carbon fibre cone' that promises the ideal combination of very light weight with maximum stiffness.

The cone is a sandwich of two carbon fibre layers in front and a single layer behind, separated by a vibration-killing

Rohacell filling. Only once the laminate is assembled is a further layer of 'XG Nanographene' embedded into its surface, contributing significantly to the stiffness of the cone. Graphene is a one

atom-thick lattice of carbon, a 2D structure that's claimed to be 100x stronger than steel with the ability to conduct both heat and electricity with greater efficiency than

ELLIPTICAL CROSSOVER

In mathematics, an ellipse is a plane curve surrounding two focal points, a term also used by Magico to describe the symmetry of its crossover design. Its 'Elliptical Symmetry Crossover' (ESXO) boasts 'greatly accelerated roll-off slopes' – up to 4th-order in the 2kHz crossover used for the A1. However, high-order slopes typically mean more components, and increased losses, which is hardly ideal in a compact, sealed box enclosure of already limited sensitivity. Magico has squared this circle, sorry, ellipse by placing a capacitor in series with the bass/midrange inductor [visible within the inset picture]. The value of the capacitor is precisely matched to the resonance frequency of the driver creating an electrical/acoustical filter that yields a 24dB/octave slope with only '12dB-worth' of components. Hence the custom Mundorf gold and oil capacitors made to Magico's specification...

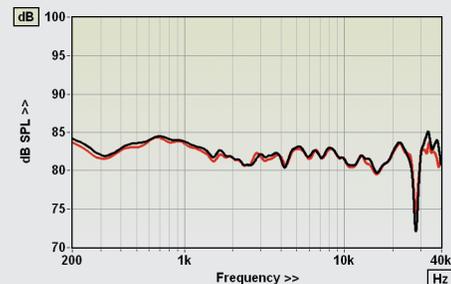


LAB REPORT

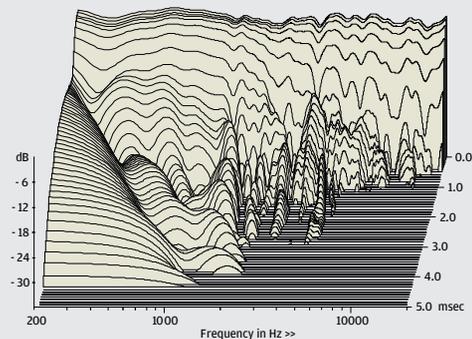
MAGICO A1

Magico's miniature claims a sensitivity of 85dB and nominal impedance of 4ohm but neither figure quite squares with our measurements. Measuring at 1m on the tweeter axis we recorded a pink noise sensitivity of 82.4dB SPL for 2.83V input, about 2.5dB shy of the spec – which is not surprising given the A1's compact size and closed box bass loading. Minimum impedance modulus was measured at 2.7ohm (20Hz-20kHz), which is low for a nominal 4ohm design. To be fair, though, this occurred at 20kHz and the minimum EPDR (equivalent peak dissipation resistance, which takes into account impedance phase angle as well as modulus) – also low at 1.3ohm – likewise occurs at high frequency (5.1kHz), where it is less likely to be troublesome. Otherwise the EPDR dips to a low of 2.2ohm at 91Hz, which is much more amplifier-friendly.

Also contributing to the low sensitivity is the A1's excellent bass extension of 47Hz (-6dB re. 200Hz), determined by diffraction-corrected nearfield measurement. Some small speakers flatter to deceive at low frequencies by having a peak in the upper bass but not the A1, whose LF roll-off is monotonic. The forward frequency response [again at 1m on the tweeter axis – see Graph 1] is tightly controlled to within ±2.4dB, for both speakers of the pair, although there is a distinct shelving down in output above 1kHz. Pair matching over the same 200Hz-20kHz frequency range is also tight at ±0.8dB. The cumulative spectral decay waterfall [see Graph 2, below] shows fast initial treble energy decay but despite Magico's advanced cone materials there is evidence of cone breakup in the resonances visible between 1.5kHz-5kHz. KH



ABOVE: Response is very uniform with good extension albeit with a slight downturn through mid and treble



ABOVE: As expected, the cabinet is well controlled but there are driver modes visible between 1.5-5kHz

HI-FI NEWS SPECIFICATIONS

Sensitivity (SPL/1m/2.83V – Mean/IEC/Music)	81.6dB / 82.4dB / 82.3dB
Impedance modulus: minimum & maximum (20Hz-20kHz)	2.7ohm @ 20kHz 39.4ohm @ 56Hz
Impedance phase: minimum & maximum (20Hz-20kHz)	-62° @ 2.1kHz 53° @ 46Hz
Pair matching/Resp. error (200Hz-20kHz)	±0.8dB / ±2.4dB/±2.4dB
LF/HF extension (-6dB ref 400Hz/10kHz)	47Hz / >40kHz/>40kHz
THD 100Hz/1kHz/10kHz (for 90dB SPL/1m)	0.7% / 0.1% / 0.1%
Dimensions (HWD) / Weight (each)	395x216x268mm / 20kg

LEFT: Magico's proprietary 'elliptical' crossover [see boxout, p61] is addressed via WBT nextgen 4mm terminals. Neither bi-wiring nor bi-amping is supported

more listeners in more varied listening spaces.

But how do the A1s fare with demanding dynamics and bass that goes way down deep? The short answer 'in their stride...'. By way of illustration I cued up the 'volle dynamik' 2009 remix of Yello's 'Oh Yeah' [The Race; Mercury Records] and was positively startled by the attack of the synthesised percussion as it rattled right through Dieter Mier's deep and rumbling vocals (another Fairlight effect, if memory serves).

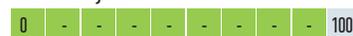
Once again, all the elements of the set were in balance, the bass delivered with slick attack and no artificial bloom or boom. Indeed, its bass just descends very smoothly and quietly exits – so you are barely aware of the missing octave nor, in the modestly-sized rooms likely to play host to the A1s, will you miss it.

Neither, I might add, will you likely want for level because, insensitive though they are, the A1s soak up power and push out those SPLs as if the drivers were possessed. So if you are short on space but deep of pocket, the Magico A1s are Hobson's choice. Simple as that. 🗲

HI-FI NEWS VERDICT

For the A1 Magico has leveraged its years of engineering know-how, made sensible concessions to the bill of materials, and condensed the lot into a remarkably solid little speaker. Its design allows for great flexibility in placement, in-room, on-table or classic 'bookshelf' locations. And its sound is so smoothly extended and integrated that many an intermediate-sized floorstander will be put out to pasture.

Sound Quality: 90%



Robin Hood music through this side-long saga, there are sequences of Fairlight-processed strings and keyboards that can sound crushed, thickening and coarsening the clarity of the multi-tracked mix.

Here, however, the A1's cut through what might have descended into murk to expose a level of detail, of structured edginess and complexity that typically escapes many larger but no less costly loudspeakers. For once I could listen through all 25 minutes and relish the transitions between the acoustic and the synthesised, between the elegant simplicity of a solo bell and the dynamically-challenged Vocoder.

IN GOOD VOICE

Also like all good pint-sized boxes, the A1 is a supreme vocal performer, though not, in this case, because the midband is emphasised while bass and treble are in recession. While the A1 might not quite manage the 'in-your-head' acoustic trick of the aforementioned Avantgarde horns with demo quality vocals – Richard Burton's preface to Jeff Wayne's *War Of The Worlds* [Columbia, DPCD 96000; DSD64] or 'Hey Laura' by Gregory Porter [*Liquid Spirit, Deluxe Edition*; Blue Note 374173-4] spring to mind – its seamless, all-of-a-piece integration will undoubtedly serve