



Cutting edge



The new R700 loudspeaker benefits from advanced technology used in the flagship Blade, says KEF. **Jason Kennedy** listens in...

Cue fanfare! KEF is fifty years old, an achievement it has been celebrating with the £20,000 Blade, its most ambitious loudspeaker ever and a design that first appeared as a concept, but made it into full production last year. It incorporates the most advanced version of KEF's coaxial Uni-Q drive unit thus far produced, so it's only natural that the company should trickle down the technology into more affordable loudspeakers. The R series is the first to really take advantage of this, and features a Uni-Q mid/treble unit that shares parts with that found in its aforementioned flagship.

The R700 is an *exceptionally* well finished floorstanding loudspeaker; the piano black sample that took up residence in my listening room is one of the sleekest I've used in a long while. It sits on four precision cast aluminium outriggers for stability, and these have lockable spikes at each corner for a firm fixing. The chrome finished cable terminals have a simple but elegant linking system that consists of threaded caps; just unscrew them to unlink and bi-wire, no need to remove links.

Unlike previous KEF ranges, the R series floorstanders' (of which this is the middle model) drive units are arranged D'Appolito-style with bass units either side of the Uni-Q. The difference is that most D'Appolito arrays have a tweeter in the middle of two mid/bass units, and the quality of dispersion increases as the crossover frequency goes down. By using a mid/treble Uni-Q KEF is able to get this point down to 350Hz, far lower than any tweeter will go.

KEF's engineers have put a lot of energy into making the drive units on this speaker work well, for the Uni-Q they have taken the voice coil, copper-capped pole piece and 'tangerine' waveguide from the Uni-Q in the Blade. The waveguide came about as a result of the research and

development team that is shared by KEF and Celestion, a company that solely makes pro-audio loudspeakers and is part of the same group. The 'tangerine' is neither orange nor round, but does partially block the tweeter dome for the same reason, and this adds a useful 3dB of sensitivity at 20kHz as well as improving dispersion.

The tweeter dome beneath it has been reinforced around the edge with a second layer of aluminium that forms an ellipse-shaped void around the edge and emulates the way that many bridges are supported by a curved structure. The edge, being the weakest part of the dome, needs the most reinforcement, and like certain other tweeters on the market, this one has rearward ventilation via a damped tube.

The midrange driver that surrounds the tweeter is made of magnesium/aluminium, and has a very small surround because it has a very short throw. The bass drivers are a combination of a lightly dished aluminium exterior plate bonded to a

DETAILS

PRODUCT:
KEF R700

ORIGIN: UK/China

TYPE:
floorstanding
3-way bass reflex
loudspeaker

WEIGHT:
25.9kg

DIMENSIONS:
(HxWxD)
321x1,121 x 368mm

FEATURES:

- bass drivers: 2x 165mm aluminium
- mid/treble driver: 125mm/25mm aluminium cone/dome
- finishes: piano black, walnut, rosewood
- magnetic grilles

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paper cone of a variety that would be ineffectual as a drive unit, but provides a stiff link to the voice coil.

The R700 is not just about drive units. KEF's engineers have used finite element analysis (FEA) to figure out the best places to put bracing and constrained layer damping pads. There are four large examples of the latter inside the R700 and these help to turn cabinet vibration into heat. The two reflex ports on the rear have also been given the full computer modelling treatment, a process that has resulted in a very specific shape to either end of each port.

Sound quality

The R700 has a considerably smoother sound than most of the speakers that I am familiar with, and early listening left me craving more definition and grip to the bottom end in particular. But after some positioning experiments and component as well as cable changes, the breakthrough came when I removed the heavy damping that hangs either side of my listening room to dampen first reflections in a long but not very wide room. This allowed the KEFs to show off their excellent lateral dispersion and deliver some bite along with the plentiful dose of detail that they produced beforehand. They image spectacularly well with voices and other acoustic sources, Nils Lofgren's acoustic guitar was revealed in all its bodacious tonality and the ambience of his live performance was projected most effectively into the listening room.

The KEF R700s image spectacularly well with voices and other acoustic sources...

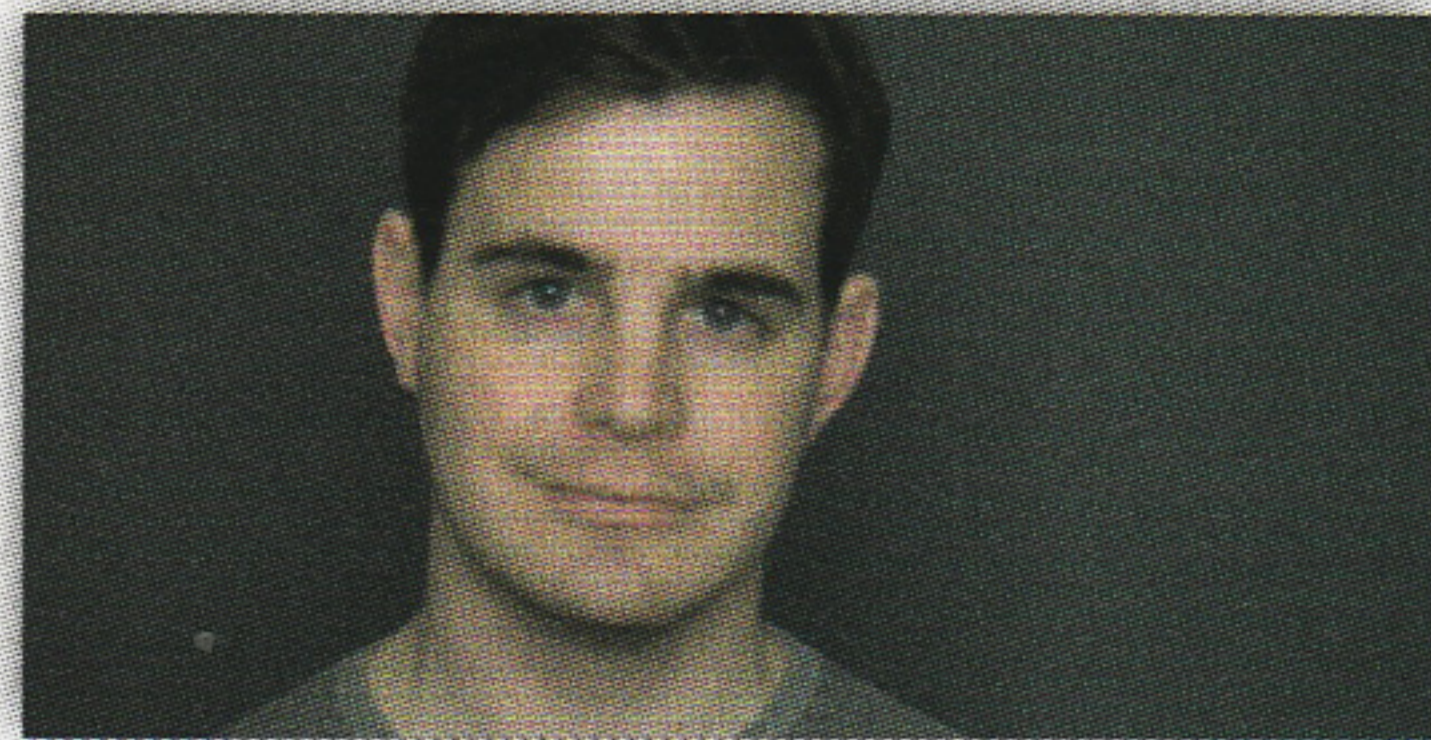
The R700 has impressive bass extension and needs a bit of space to breathe; it worked best when placed about a metre from the rear wall and a little less either side. KEF supplies port bungs for situations where closer to wall siting is a necessity, but you get the full benefit of the clever port design without them. The extended and substantial quality of bass is obvious with Kraftwerk's *Man Machine*, where synth notes drop down as the track progresses. This was fully apparent thanks to the speaker's ability to control and define the low end. This quality contributes to the realism of images as well, smaller speakers can produce a



The R700 sports KEF's distinct 'tangerine' waveguide

Q&A

JASON KENNEDY SPEAKS TO KEF RESEARCH ENGINEER JACK OCLEE-BROWN...



JK: Why use almost flat aluminium bass cones rather than more conventionally shaped ones?

JO-B: The midrange driver frequency response is affected by irregularity on the front baffle. Other drivers, the edges of the box and port openings can all cause secondary radiation and scattering of the signal. On the Blade we were able to go to the extreme of only having the Uni-Q alone on the front baffle. For the R-series we were not able to be quite so extreme with the design. However, one of the measures we are able to take to minimise the secondary scattering effect is to make the LF drivers as flat as possible without compromising their performance.

Unlike some competitors you don't use exotic materials for the tweeter dome, why is this?

The geometry has a dominant effect on the performance of a tweeter dome. If the geometry is not well designed then the performance can be extremely poor, even with the most exotic materials. For example, if you take a completely flat disc of aluminium of the same diameter and thickness as the R-series tweeter and tried to make this into a driver, you'd find that the dome break-up is only a few hundred Hertz. Because of this we have concentrated on working with relatively conventional materials but using very unconventional geometries, such as the stiffened dome structure, to optimise the overall performance.

What hardware and cables do you use for R&D listening?

We have a large Electrocompaniet system, which we use as a high-end, high-power reference. This consists of a pair of the Nemo monoblocks with a EC4.8 preamp. We use a server system as a source with a Squeezebox Touch feeding either a Prism Sound Orpheus, or an Arcam D33 DAC. We also use an Arcam system as a lower price reference consisting of a A38 integrated and a CD37 CD/SACD player. Cables are generally from the Chord Company.

HOW IT COMPARES

THE SMOOTH clean nature of this big loudspeaker's presentation is quite different from the balance you find with competitors such as B&W and PMC. It's not as open as examples from either of these, nor does it have as much dynamic grip. Instead it has a fluid, relaxed sound that renders acoustic sources with considerable panache. It's not quite as dynamic or exhilarating as the PMC twenty.22, but has considerably greater bass extension thanks to two dedicated bass drivers in a substantial cabinet, factors which also give it obviously higher power handling.

B&W's nearest offering likewise, the PM1, is also a standmount and thus lacks the bass extension and the ease of the R700, but can compete in terms of image precision if not tonal shading. Images from the KEF are more solid and real. Once you get used to this KEF's balance it is extremely engaging, it really does focus your attention on the message, and not the medium!

IN SIGHT



- 1 heavily braced and damped cabinet is beautifully finished
- 2 KEF's Uni-Q mid/treble array sports 'tangerine' waveguide
- 3 one of two rear reflex ports, CAD modelled
- 4 elegantly designed biwireable speaker binding posts
- 5 one of two bass drivers, mounted D'Appolito style

spacious image, but only those that have good bass extension effectively produce the full size of a soundstage and give you such a strong sense of *terra firma* in the recording. It's an intense immersion experience when you use high quality ancillaries like the Aurender S10 digital transport and Resolution Audio Cantata DAC through Townshend's Allegri preamp and Velvet A3.5 class A power amps.

This is a revealing loudspeaker, but doesn't have an obviously transparent balance, rather it has a warmth to the mid and top which makes it very easy to close your eyes and forget about the system so that you can revel in the music.

It's not exceptionally strong in the timing department, yet still has an easy flow that's intrinsically musical. On more than one occasion I found myself being carried away by the melody or becoming engrossed in the way that pieces had been put together in the studio. It does this by presenting the recording in all three dimensions without any emphasis on leading edges, or other hi-fi characteristics, yet at the same time the work that KEF has done to control the cabinet means that it's notably quieter than is usually the case with MDF enclosures.

This KEF can also sort out complex or densely orchestrated music with relative ease; it's always possible to hear what's being contributed to the background of a piece even in the context of busy material. This was evident from Conjure's *Jes' Grew*, a system-tangler of a track with a lot of percussion and a very funky bassline. It's a piece that gets rather messy in the wrong hands and can lose much

of its appeal, but the KEF sailed through without batting an aluminium eyelid. It's this quality that's key to its easy sense of pace. It seems pretty relaxed until something genuinely lively comes along, and then you're swept up in the exhilaration of the music.

Conclusion

This is the first KEF I personally have got *really* great results from. The ingredients add up to something extremely capable and entertaining. The apparent warmth of the mid/treble is basically a reflection of the very low levels of distortion it produces, and the effortless way the Uni-Q drives the room. Indeed, the R700 is a very revealing speaker that has a remarkably even perceived balance, and very low levels of colouration. It warrants top-notch ancillaries and its build quality is above what's usually encountered at this price. If you want a speaker that delivers the full shape and flow of the music, then hear this. ●

Hi-Fi Choice

OUR VERDICT

- SOUND QUALITY** ★★★★★ **LIKE:** Smooth and revealing midband and top allied to hefty bass extension
- VALUE FOR MONEY** ★★★★★ **DISLIKE:** Those seeking maximum dynamic grip may not find it to taste
- BUILD QUALITY** ★★★★★ **WESAY:** An extremely polished, well rounded and musically satisfying loudspeaker; fine value too!
- EASE OF DRIVE** ★★★★★

OVERALL

