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META MAGIC!

KEF's top **Reference 5** gets the Meta treatment!



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KEF Reference 5 Meta floorstanding loudspeakers

Jason Kennedy



I should know by now but like a few other things the meaning of the KEF acronym eluded me. So I looked it up; it's not Kids Earth Fund nor is it Knights of the Eternal Flame (which is a pity perhaps), but Kent Engineering & Foundry. KEF is a loudspeaker company founded way back in 1961 in a Nissen hut in Tovil, Maidstone, that's the bit that I can remember. I'm not sure if they still have the hut, but Tovil is where KEF makes its best loudspeakers including the Blade and Reference ranges, of which the shiny Reference 5 Meta is the top dog.

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KEF is describing this as a complete 'ground up' design forced to some extent by the internal conical waveguide required for the MAT system.

» The Reference range has recently been revised and given the 'Meta' suffix to indicate a new way of treating energy coming off the back of the tweeter in the middle of the Uni-Q treble/midrange driver at the heart of these loudspeakers. Unlike other companies that have used tapered tubes and damped cavities to prevent the air behind the driver from bouncing back and distorting its behaviour KEF has developed a relatively shallow maze of channels to do the job. Taken on its own this MAT (Metamaterial Absorption Technology) looks like one of those toys that you have to tilt around in order to get a small ball down a labyrinthine path. But the length of each of the paths has been carefully chosen to absorb a narrow band of frequencies and when combined the 30 channels offer "almost 100% absorption across the spectrum above 620Hz". And given that this is a tweeter it doesn't operate at anywhere near that frequency, in fact it crosses over to the midrange at 2.1kHz.

MAT was developed for and introduced in KEF's popular LS50 model so it's a rare example of technology trickling up the range and indicates that it's not just a matter of spending more on the bigger speakers, but a ground up upgrade and one that has required other changes to the driver as a whole. For a start, the 'tangerine' waveguide that sits over the tweeter dome on the latest Uni-Q has been reinforced because MAT was causing a deformation in the surround support; this has been remedied with reinforcing ribs to the rear of this element.

Small spiders

KEF's acoustic engineer Jack Ocleo-Brown has also made changes to the midrange motor system in an effort to improve linearity. In fact, KEF is describing this as a complete 'ground up' design forced to some extent by the internal conical waveguide required for the MAT system. As you can imagine, the combination of two drivers on one axis is already a complex challenge and here it has a split top plate on the magnet system so that flux density does not reduce as the coil moves away from what would usually be the area of maximum flux. Something that equates to maximum control and minimum distortion. The driver suspension, its surround and spider, has also been upgraded. The spider is now smaller and thus lighter making it easier to place its resonant frequency out of the driver's operational range. Also the surround, which forms part of the tweeter wave guide now has greater and importantly more linear excursion for reduced overall distortion.

KEF has also sought to reduce vibration from the front baffle that muddies the midrange but not by the usual method of putting a compliant ring under the chassis mounting and decoupling the whole driver as is found in a lot of designs. They argue that this method allows the whole driver chassis to move and thus removes the mechanical grounding that the cones need for low distortion operation. Instead KEF has decoupled the magnet assembly, which is the heaviest part of the driver chassis. Apparently the main benefit of this is that the chassis rim stays still and doesn't radiate any sound itself.

There is not a lot of detail about the four bass drivers which continue from the previous Reference series. They are 6.5 inch units with an alloy cone and a large aluminium voice coil in a "massive, vented magnet assembly" that is naturally designed to complement the latest iteration of the Uni-Q mid/treble in between.

The cabinet is constructed using constrained layer damping for minimum vibration and is distinctly tall and handsome with a slim profile but plenty of depth, it looks very modern in its white livery with silver drivers. KEF offers a number of finish combinations in high gloss paintwork or book matched veneers alongside five driver finish options including copper and blue.

It looks straightforward, but caps on the back cover fixings hold the front baffle in place and explain why there aren't any trim rings on the bass drivers. There are two ports on the back with removable inserts and the Reference 5 Metas are supplied with four shorter alternative ports. The idea being that in situations where the bass output is too much for a given room or speaker position these can be used to stop the bass from being overblown.

The Reference 5 Meta sits on a pair of outriggers that bolt onto the bottom and provide a wider footprint for stability. The spikes and their seats combine to form a cone shape that's capped with a lightly domed top, the latter can be removed for easy height adjustment with an Allen key. The terminals look like they come from KEF's biggest model (the Muon) with asymmetrical aluminium clamps for bi-wired connections to the amplifier. If you only want a single wired connection as I did, KEF have come up with a neat way of linking the bi-wire terminals internally rather than using a plate or jumper wires. Two adjusters screw in for single wiring or can be removed for bi-wired set ups.

All the work that the team in Maidstone has done on the latest Reference 5 Meta pays off almost immediately when you put a good record on the turntable, especially one with »

EQUIPMENT REVIEW
KEF Reference 5 Meta

» some emotional impact. These speakers seem particularly adept at delivering this critical facet of the music, arguably the most critical one given that emotional communication is what music is ultimately all about. I happened to play Ryley Walker's *Golden Songs that have been Sung* [Dead Oceans] and the song 'I Will Ask You Twice', which sounded rather more heartfelt, deep and meaningful than usual. This is clearly a special loudspeaker, one that breaks down barriers between artist and listener in ways that you don't often find.

Metaphysical

There sometimes seems to be an inverse law of communication abilities with regard to number of drivers, the more drivers a speaker has the harder it can be for it to get the message through. There are enough 'technically excellent loudspeakers that leave you cold' to make one that doesn't stand out. Whether this is down to the Meta

factor is hard to say but reducing midband distortion must help in this regard. These KEFs are not short on detail either, they are extremely revealing in an unhurried yet on the ball fashion. When the bass and drums of Patricia Barber's version of 'Yesterdays' appear in front of your ears it seems almost magical, it's partly because of the total silence that precedes the first notes but also because of the way that their presence takes up physical space in the room. It's safe to say that these cabinets are not adding much if any coloration to the mix, especially in the bass which is both very well extended and powerful, more so than I had expected in truth. This is not a huge loudspeaker in terms of physical volume, yet it's capable of providing the lowest octaves even in a fairly dry room. And this means that double bass and drums have both impact and body that makes for a very satisfying listening experience with a good recording. »



“ This is clearly a special loudspeaker, one that breaks down barriers between artist and listener. ”





The Reference 5 Meta is very revealing and a strong communicator of a key element of music.

» I was struck by the image height that these KEFs produce and initially presumed that it's because they are fairly tall speakers, but then it occurred to me that the mid and treble drivers are no higher than on a bookshelf speaker, and this is the source of much of the detail that goes into producing an image. It's a result of KEF's work in improving dispersion from the Uni-Q, but also a factor of better quality bass, subwoofers after all have the effect of creating more convincing imaging. I used the Reference 5 Metas with a Moor Amps Angel 6 power amplifier for much of the time and it had no trouble with their 88dB at four Ohms sensitivity which is to be expected of 150 Watts, what surprised me was that the Melody AN300B Max (also reviewed this month) managed to drive them without much difficulty. It's hardly surprising that the bass lost some of its gravitas with this 21 Watt triode amplifier but the combination proved to be rather enjoyable, smooth and polished whilst delivering the body in the image. In fact the extra fluency that these tubes brought to the party proved rather enchanting, especially with the harmonies of Crosby, Stills and Nash singing 'Helplessly Hoping' at the peak of their vocal powers. It was very easy to hear that two voices shared the right channel while the third got the left, and it was no effort at all to be swept up in the beauty of the song.

I also indulged in a bit of Massive Attack for contrast and found that there was enough power and control in the bass and impact through the mid to appreciate the darkness that their work explores in a more tuneful and clean fashion. An old blues compilation on vinyl was perhaps the perfect material for the tube powered KEFs, the recordings were probably made with tubes in the first place and the effect was almost like time travel, the years falling away so that despite the absence of stereo there was a palpable sense of musicians in the room.

Back with solid state power and the Weather Station's mumbblings on 'Marsh' and other tracks where it's not clear what is exactly being said but the feelings behind it are transparent in the hands of these KEFs. With an older favourite in Talk Talk's *New Grass* where the vocals are quiet but easy to follow and the nuances of the performance are clear thanks to the transparency on offer. These speakers are borderline explicit when it comes to detail resolution, they really drill down into whatever you put through them and deliver the musical treasure that other speakers fail to expose. It gets the micro dynamics, the differences between the volume of notes, spot on and this brings a variety and colour to subtle pieces that often

gets lost. It does the macro too of course and I thoroughly enjoyed Led Zeppelin's 'Killing Floor' where they managed to give the bass a thickness that Metallica would have killed for, and were clearly attempting to emulate on the *Black* album.

I didn't need to use the alternate ports with the Reference 5 Metas because the bass remained clean and controlled with the Angel 6, in fact it sounded deeper and more substantial on some familiar tracks than is often the case. Radiohead's 'Desert Island Disk' for instance usually washes over me in an ambient fashion but here there was a lot of detail at low levels and a substantial kick drum, which made the track more diverse and interesting.

Late in the day a CAAS EPre II preamplifier and Elysian 100 monoblocks turned up and had a spin with the KEFs. This amp's first 20W are Class A which helped these speakers produce an even more polished and finely detailed result, one that was beautifully relaxed yet with excellent imaging.

Clearly the latest KEF Reference 5s are remarkable loudspeakers, how much the Meta treatment has added/taken away is hard to say but if the results I got are anything to go by they haven't done any harm. The Reference 5 Meta is very revealing and a strong communicator of a key element of music, it gets to the heart of the performance in a way that makes you want to listen longer, and that is after all the point of a great sound system. +

Technical specifications

Type 3-way, six-driver, reflex loaded floorstanding speaker

Driver complement One Uni-Q incorporating 25mm aluminium dome MAT tweeter and 125mm aluminium cone midrange; four 165mm aluminium cone bass drivers

Crossover frequencies 450Hz, 2.1kHz

Frequency response 32Hz–40kHz (long port), 35Hz–40kHz (short port)

Impedance 4 Ohms

Sensitivity 88dB/W/m

Dimensions (H×W×D) 1402 × 205 × 462mm (inc grille, terminals and plinth)

Weight 60kg/each

Finishes Satin Walnut/Silver, High-Gloss White/Blue, High-Gloss White/Champagne, High-Gloss Black/Grey, High-Gloss Black/Copper.

Price £17,500/pair

Manufacturer KEF kef.com