KEF LS50 Wireless

ANDREW EVERARD AND MARTIN COLLOMS JOINTLY REVIEW KEF'S ACTIVE WIRELESS/STREAMING LS50W SYSTEM

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Is KEF's *LS50W* good value for money? It's an obvious question when a pair of the passive speakers will cost around £800, while the version here is nearly £2000. The £1200 difference will buy a lot of amplification, and there's no shortage of active speakers (and slightly simpler powered versions) available for much less than £2000.

The active speaker market has grown hugely in recent times, from being the preserve of Pro users and those hi-fi enthusiasts willing to set up a stack of boxes – remember those Naim six-packs and similarly complex Linn systems? – into a much more home-friendly beast, well suited to the connection of computers, *iPods*, *iPhones* and suchlike.

From a purist point of view, one could suggest that the current growth is due to the sonic benefits of active speaker technology, but I suspect this isn't the case. Much of the appeal is that it cuts down the box-count and allows a minimalist system to be assembled.

So, the new generation of active speakers is, in the current parlance, 'A Thing', and KEF is a fairly late arrival to the party. But the Kent-based company has something special to offer, as the *LS50W* is much more than just an 'activated' version of its popular mini-monitor. Yes, it has a 200W Class D amplifier for the 130mm magnesium/aluminium alloy bass/mid driver (which is tuned using the same flexible rear port seen on the *LS50*), and a 30W Class A/B amp for the less power-hungry 25mm vented aluminium dome tweeter sitting in its centre. But onboard digital signal processing also allows much greater driver control, with basic and expert settings. Simply, equalisation can be set for siting on desk or stands, close to a wall or in free space, while the expert mode allows much deeper delving into the speaker set-up.

The *LS50W* has both digital (Toslink, USB Type B and Bluetooth with aptX) and analogue inputs, along with WiFi network connectivity. So hook up a computer *via* USB, use conventional audio components, send music wirelessly from a phone or tablet, or stream locally-stored content and internet streaming sources from the home network. It can therefore access the high-quality sound from Tidal, for example, will have music fired to it from Roon-capable devices, and could even receive music *via* Bluetooth from voice-activated interfaces. (Amazon's inexpensive *Echo Dot* 'puck' springs to mind.)

All this requires a means of controlling the speakers. Although a remote handset is included, the best user experience (and to access streaming content) requires running the company's control App on a smartphone or tablet. And even though the model's '*W*' suffix stands for 'wireless', the system isn't quite wire-free, as mains cables feed each speaker, and a multicore cable terminated with RJ45 plugs is needed between the two speakers.

However, this shouldn't be confused with inexpensive 'powered' speakers (with all the amplification in one, while the other is just a passive slave). While the right hand speaker here incorporates all the processing and connectivity, the left one is still fully active, with its own amps built-in. A length of linking cable is included in the package, alongside mains and USB cables, but one advantage of the connection KEF has chosen is that inexpensive longer runs can be bought should one want to move the speakers further apart.

It's worth noting that KEF also sells matching £250 stands: based on Custom Design's *FS104* model, these are available in black, white or charcoal to match the speakers' range of finishes. The latter are 'titanium grey' (with a red anodised driver), 'gloss black' (with a blue cone), or 'gloss white' (with a copper driver cone).

Colloms had some problems with the visibility of the top panel controls on his black pair, and I have to say that even after spending some time with 'my' white pair, I never quite got the hang of these controls, and stuck instead to App operation.

Sound Quality

Much easier to get to grips with was the sound of the *LS50W*. While not the last word in clarity at low frequencies, with a hint of trying to compensate with quantity what it lacks in quality, it gave a slightly 'thickened' effect in the lowest register. But there's no denying that the system makes an exceptionally enjoyable sound from very modestly-proportioned enclosures. The low-frequency limitations are understandable, given that the speakers are just 30m tall. (Those who really want more bass should note that a mono subwoofer output is fitted on the rear of the right speaker.)

For all that, the speakers manage to sound rich and smooth, with excellent focus and detail across a

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wide range of music. They're fast and precise in the midband and treble, and do that usual UniQ thing of seamless integration and fine imaging, creating attractive, well-defined soundstage pictures. These are as striking with the close-up presentation of an intimately recorded jazz trio, such as on the Foehn Trio's *Magnésie* album, as they are with the large scale forces present on Barenboim's recent release of Elgar's *The Dream of Gerontius*. However, it should be noted that the *LS50W* wasn't able to manage gapless playback at the time of review, instead inserting a brief pause between tracks – something I suspect that's probably fixable in a future firmware update.

The speakers' speed and midband openness mean that acoustic instruments are handled well, and voices have a lovely sense of expression. While that slightly thuddy bass is evident on electronica or rock music, the 'big fiddles' of an orchestra are much more persuasive, and upright jazz bass has fine resonance and presence.

All of which brings us back to the question I posed about the value for money offered by the *LS50W* right at the beginning of this review. And the only conclusion to be reached is that, while these speakers might be beyond the reach of the average *iPhone*-toting student, the beauty of both the concept and the musical achievement is such that they can only be seen as remarkable value for money.

The *LS50W* system – for a system it is – is not just elegant, simple and highly attractive, but also exceptionally well-realised and totally enjoyable. It will be interesting to see how the KEF engineers take this concept and run with it. Like Colloms I'd love to hear these ideas applied to a larger, perhaps floorstanding model – but will also watch with interest to see how the technology might 'trickle down' to even more affordable designs.

MARTIN COLLOMS CONTINUES:

I found this remarkable loudspeaker system had very deep and sharply focused stereo images, and its sound was well imbued with subtle musical detail. It was particularly good with classical programme, smaller musical forces, and especially piano (which could play really loud). Stereo perspectives were notably stable, particularly so with the midrange phase compensation engaged, which introduced a subtle but worthwhile extra naturalness for me. Coloration was very low and the timbre was neutral.

I found the bass a mite slow on pop and jazz, and it overloaded fairly early in the bass with heavier rock material. However, if moved a little nearer to a wall and operated with the bass setting adjusted to 'less bass extension', it picked up some speed and power. It has versatile equalisation settings for desk, stand,

close-to-wall and free space, and this led me to agree with Everard's view that it deserved a Best Buy rating.

HIFICRITIC BEST BUY

Test Results

With a low diffraction shape and full electronic equalisation one should expect good frequency responses on- and off-axis, and that is what we got. With this a coincident two-way source, the off-axis frequency responses are first rate. Some in-room measurement errors are present but the overall output is undoubtedly very even, both on- and off-axis.

Unsmoothed on-axis, it measures an amazingly uniform ±1dB, 2 – 22kHz, the like of which I have not seen before, and which is more like a precision B&K microphone. A mild out-of-band resonance of about 7dB high is visible, but at 40kHz it's very likely inaudible; even this feature is well blended at 25 degrees off-axis.

The off-axis responses are very smooth and really well integrated, contributing to the high level of audible neutrality, combined with exceptional image focus and very good image depth at this price. Even at 60 degrees lateral off-axis, while perceptibly falling off at higher frequencies, output was still amazingly uniform.

Taken overall this behaviour delivers a nicely even power drive to the room acoustic. The in-room curve says it all: slightly rich in balance but supplying a really smooth and integrated 'bump free' acoustic output.

Low frequency extension will depend on the loudness setting but at moderate powers -6dB

came in at about 45Hz. (This corner frequency was audibly higher than this when playing rock at a higher sound levels.)

The *LS50W* gave average distortion figures at higher powers, and they also deteriorated at lower frequencies as expected, due to the small port and bass driver size (the centre doesn't contribute as it is a fixed part of the tweeter assembly).

At a moderate level of 80dB at 45Hz, there was audible chuffing from the port, second harmonic was 3.8%, and third harmonic about 12%. [These figures are rather dependent on the mike location relative to the rear port (tuned to 50Hz) and the bass driver.] The figures improved at the port's maximum efficiency (at around 55Hz), with 3% second and 5% third. By 100Hz for a lower 82dB spl, second harmonic was 0.16% and third a very good 0.13%. This KEF design includes some degree of near overload power management at low frequencies to reduce the incidence of audible distortion.

Improving at 200Hz, by 300Hz with reduced cone excursion it improved rapidly, with second harmonic an inaudible 0.2% and third at a fine 0.1%. By 1kHz it was in its stride with 0.03% second and 0.08 third harmonics, very fine results. I checked out 90dB at 500Hz and got 0.3% and 0.1 % for second and third respectively, which are good for a small loudspeaker. In the prime treble range, 5kHz driven at a high 90dB spl, I measured 0.08% second and a fine 0.06% for third, which excellent performance may lend a sweeter sound quality than often found with similar loudspeakers.

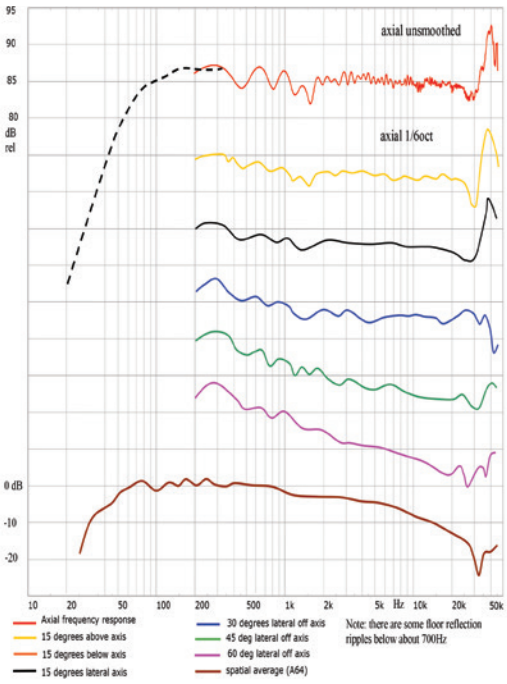
Checking out the waterfall display for energy decay with time, it was fascinating to see the textbook quality early time response: phase coherent, linear phase and in step, with no pre echo, even from the crossover. And the overall decay is desirably quick, associated with the clarity, image depth and the clean transients heard, while the driver phase integration can be seen to be very good, as expected for this design. Some minor clutter is visible after a millisecond and this decays rapidly.

I noted the occasional synchronisation drop out for the WiFi control App sometimes requiring reconnection, and my main auditioning was mainly via a wired network connection to the Naim *UnitiServe*'s 2GB of music and not *via* Bluetooth. (BTW, on my sample the remote control's dark-blue-on-matt-black legends were virtually illegible in dim light.)

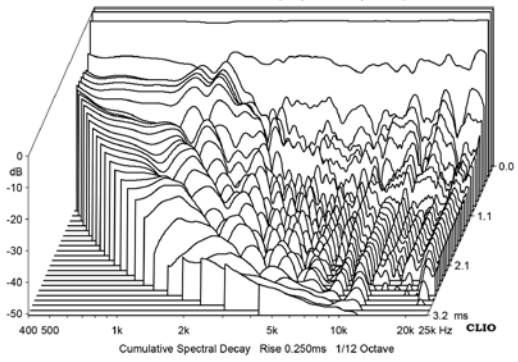
Conclusions

This compact, fully active, remotely controlled point source design is a technical and acoustic *tour de force*. It's an obvious Best Buy, and I'm now impatient to hear a larger active model.

KEF LS50W active: Frequency Responses (line input)



KEF LS 50W: Waterfall Display, Decay Response



HIFICRITIC Loudspeaker laboratory measured test results Aug 2017

Make, Country	KEF, designed in the UK
Model	LS50W: moving coil active, stand/shelf mounting, vented box loading
Price per pair	£1,999
Finishes§	titanium grey with red drivers, gloss black with blue, gloss white/copper anodised drivers
Size (HxWxD), weight	30x20x30.8cms; 10kg, 22lb
Drive Units	2 -way 13cm alloy Mg/Al cone bass/mid, 2.5cm Aluminium dome
Type	Digital crossover active with phase correction facility
Inputs	Bluetooth, Ethernet, Optical, USB 'B', WiFi, RCA line analogue
Frequency response, axial	45Hz to 22kHz +/- 3dB (listener axis) (very good tolerance)
Frequency response off- axis	Very good: see graphs and in-room response
Bass extension	45Hz -6dB, (40Hz, -6dB in-room limit)
Max loudness, in-room	102dBA for a stereo pair
Power rating	200W LF, 30W HF Active
Placement	Stands, plus flexible placement

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