KRIX ACOUSTIX MK2

LOUDSPEAKERS

The proverb tells us we can't have our cake and eat it too, but it seems that Krix has turned that proverb on its (proverbial) head with the Acoustix Mk2, because with these particular speakers, you can have your cake and eat it too. (And just in case you're wondering what the hell that proverb means, it's that you can't have the best of two options that are mutually exclusive.)

How the proverb applies in this case is that when it comes to buying speakers, it's a given that you have to make trade-offs. For example, you really can't expect to have deep, solid bass if you are not prepared to put a pair of large floor-standing speakers in your room. Another example is that if you don't want your speakers to be visible at all (by building them into a cabinet of some type), you can't also expect them to deliver 'hi-fi' sound quality.

Krix's Acoustix Mk2 speakers are notable for a number of reasons. One is that despite their modest size, they will deliver bass that will have people looking around for the floor-standing speakers. Another is that they will deliver true hi-fi sound, even if they're mounted inside a cabinet. And yet another is that although they're great stereo speakers, their driver layout means a Krix Graphix speaker can be used as a centre-channel, guaranteeing truly seamless audio 'pans' from the left speaker across to the right when using the three as part of a multi-channel audio or home theatre system.

THE EQUIPMENT

The Krix Acoustix Mk2 is essentially a perfectly symmetrical three-driver, two-way bass reflex design with twin front-firing ports.

You don't need to be told why it's a 'perfectly symmetrical' design: one glance at the photograph accompanying this review should be all that's required for that!

The driver arrangement that puts a single tweeter between two other speakers is often called a 'D'Appolito' driver layout (named after famous US speaker designer Joseph D'Appolito), but it would be more appropriate to call the one on the Acoustix Mk2 an 'MTM' layout, though even this is strictly not correct, since MTM is short for 'Midrange Tweeter Midrange', and in the case of the Acoustix Mk2, those two so-called 'midrange' drivers are actually bass/midrange drivers, so it would be a 'BMTBM' layout. Why wouldn't it be called a D'Appolito layout? Because simply placing a tweeter midway between two cone drivers is only a part of the D'Appolito specification—it's also necessary to have specific positioning between the driver centres, a specific crossover network type and crossover frequency, and a specific ratio between driver circumferences.

I was surprised at the depthiness and power afforded by the dual bass/mid drivers in the Krix Acoustix Mk2

As for those bass/midrange drivers, they use fibre-reinforced moulded polymer baskets to support doped paper cones, via a rubber suspension. Krix rates the 'nominal' diameter of the drivers as 130mm, and the overall diameter is 150mm, with a mounting hole diameter of 136mm, but the Thiele/Small diameter is 102mm, which gives an effective cone area of 145cm² (Sd). Because there are two bass/midrange drivers, the area available for bass is double this, at 290cm², so if Krix had used a single bass driver, its overall diameter would have had to be around 243mm. Each bass/midrange driver is equipped with a 25mm-diameter voice coil wound around an aluminium former that's driven by a large, vented magnet assembly, with the whole being supported by an extremely solid cast metal basket whose design incorporates under-spider venting.

The dual bass/mid drivers are crossed (at 2.1kHz) to a 25mm dual-concentric diaphragm tweeter with wave-guide central plug and ring-formed absorption chamber. The particular design is often referred to as a 'ring radiator' design, for which Danish company Vifa has two patents, so it was hardly surprising that the tweeter Krix uses on the Acoustix Mk2 is, in fact, made by Vifa itself (the particular version being an XT25SC), which has a neodymium drive magnet.

The crossover (made in-house by Krix itself, as are the Acoustix Mk2's cabinets) comprises two cross-mounted inductors (one air-cored, one ferrite-cored), three Krix-branded metalized polypropylene film capacitors and a single cermet resistor, all of which are mounted on a robust PCB. As with many designs, the crossover is easily accessible—should this ever be required—by virtue of it being mounted to the rear of the speaker terminal plate.

Although theory has it that one large bass reflex port will work as well as two smaller bass reflex ports, each with half the area, this doesn't actually work out this way in practise when you're using two bass drivers, so I was pleased that Krix uses two on the Acoustix Mk2. So, appearances to the contrary, it's not just a 'cosmetic' touch… the ports really do work better with this layout. However, the fact that the ports are on the front baffle also means that these speakers can be mounted inside furniture items (such as an AV cabinet, for example).

The Acoustix Mk2 cabinet is made from 17mm MDF, internally braced and also lined with soft white non-carcinogenic foam damping material. The cabinet is available in a variety of standard finishes. In a black vinyl finish, the speakers retail for $1,195 per pair. In a veneered finish (your choice of Black Ash, American Cherry or Atlantic Jarrah) they sell for $1,395 per pair. However custom finishes of your own choosing are available, which will set you back around $1,745 per pair, depending on what you choose.)

IN USE AND LISTENING SESSIONS

One of the several advantages of the MTM design in its two-way implementation is that because the tweeter is so close to the bass/midrange drivers, you find that even when listening very close to the speakers you are effectively hearing that acoustic ideal of a 'point source', so sounds do not appear to 'move' vertically depending on their frequency, as they can with larger, multi-driver systems. This makes them ideal for near-field listening and/or small room use.

For my listening sessions, I used the speakers just as I would conventional two-way speakers, and tried various positioning options. My favourite was to place the Acoustix Mk2s on stands, where they delivered, to my ears, their best performance, but they also performed well on shelves and back against walls. Bass was 'biggest' and best in 'on-shelf' and 'wall-mount' positions, but even stand-mounted I was surprised at the depthiness and power afforded by the dual bass/mid drivers in the Acoustix Mk2: they really punched above their weight. I was hearing far better, far deeper bass than I've heard from any small two-driver two-way system, to the point where it actually rivalled some of the smaller floor standing models I've recently auditioned. When you're auditioning for yourself, I'd recommend you play a track with big fat bass and prepare to be surprised!

Higher up in the audio band, the Acoustix Mk2s became even more impressive, as I learned when auditioning Heartstrings from The Phoncurves. Listen to the second track, *Lover*, and right from the *a cappella* intro through to the sparse piano you'll be spell-bound by the clarity of the sound, the speakers' ability to separate not just the live harmonies but also the multi-tracked vocals and the amazing detailing that even lets you hear the sound of Naomi Hodges' lips parting before she starts to sing. Then, when she harmonises with Abbie Roberts, the resulting resonances are gloriously coloured. (Download the flac of the track and be enchanted!)

I loved the high-frequency sound too: the glockenspiel on Archer & Light's *Our Love is Confetti* was beautifully rendered with crisp strikes and smoothly decaying notes. Very clean, very pure and nicely integrated with the top end of the bass/mids… a difficult

trick to pull off. Perhaps a tad less 'shimmer' than some of the very finest tweeters around, but lots more shimmer than tweeters in other speakers at and around this price-point.

Krix makes all its speakers individually, by hand, and this personal attention to detail was revealed by the realism of the sound-staging, which was outstanding. You get not only an accurate picture of where all the performers are positioned, but also an accurate picture of the stage depth, resulting in a totally immersive listening experience.

CONCLUSION

If you're looking for big sound from a pair of bookshelf speakers, you'll find that it doesn't come any bigger than from the Krix Acoustix Mk2.

Readers interested in a full technical appraisal of the performance of the Krix Acoustic Mk2 Loudspeakers should continue on and read the LABORATORY REPORT published on the following pages.

CONTACT DETAILS

Brand: Krix
Model: Acoustix Mk2
Category: Loudspeakers
RRP: $1,195 (Vinyl, see copy)
Warranty: Five Years
Distributor: Krix Loudspeakers
Address: 14 Chapman Road
Hackham SA 5163
TF: 1300 005 749
T2: (08) 8384 3433
E: info@krix.com.au
W: www.krix.com.au

⊕
- Great bass
- Pin-point imaging
- Concealable and flexible

⊖
- Nothing to speak of

LABORATORY TEST RESULTS

Newport Test Labs measured the in-room frequency response of the Krix Acoustix Mk2 as being 58Hz to 40kHz ±3dB (as shown in Graph 1) which is an excellent result. However, if you look carefully at the graph you can see that the 58Hz –3dB limit came about due to a tiny dip at this frequency and that the response actually rises a little below 58Hz and then extends down to around 48Hz before again dropping to –3dB again.

As you can see, the overall response is balanced, so that within the ±3dB allowed variations in response, there is no spectral skewing to favour one frequency band over another. The response does roll-off slowly above 10kHz, but does so only very slightly. There are minor discontinuities in the response around 1–1.5kHz and between 2.5kHz and 4.5kHz, but the variations are in the order of ±1dB, so are really of academic interest only, as they would not affect the sound quality.

The protective grille has been well-designed, and is almost totally acoustically transparent, but you can see from Graph 2 that the response of the Acoustix Mk2 is slightly flatter without it. However, even with the grille fitted, the high-frequency response still fits within the ±3dB specification save for two small suck-outs that are well above the limit of human hearing, at around 28kHz and above 35kHz, so I would recommend listening with the grilles fitted at all times.

Graph 4 shows the low-frequency response of the Krix Acoustix Mk2 via a near-field technique that simulates the response that would be obtained in an anechoic chamber (so not an in-room response). You can see that the bass/mid-range drivers roll off quite rapidly below 100Hz and the ports' output peaks at 51Hz. The ports' output rolls off slowly to 500Hz. There is a little unwanted output from it up around 1.5kHz, but it's more than 20dB down, so of no concern.

Krix puts the nominal impedance of the Acoustix Mk2 at 8Ω, but looking at *Newport Test Labs'* measurement (the red trace on Graph 4), I'd put it at 6Ω. And whereas Krix claims a minimum impedance of 4.3Ω, it looks to me more like 4.5Ω (at 200Hz) from the trace. The position of the 'saddle' between the two resonant peaks suggests that there will be little usable output from these speakers below 52Hz. There is a small discontinuity in the impedance trace at around 4–5kHz that was present on both loudspeakers and corresponds with the tiny lift in the frequency response that's visible on Graph 1 and is possibly indicative of a minor resonance.

The measurements prove the Krix Acoustix Mk2 to be a very well-designed loudspeaker

Newport Test Labs measured the sensitivity of the Krix Acoustix Mk2 as being 86.5dBSPL at one metre, for a 2.83Veq input. This is almost 3dB shy of Krix's specification of 89dBSPL. *Newport Test Labs'* measurement methodology is tough on small speakers, so 86.5dB would be a 'worst-case' scenario, but conversely, I think the Krix's 89dBSPL spec looks a bit optimistic. That said, 86.5dB is a very good result for a small speaker.

Overall, the measurements *Newport Test Labs* made of the Krix Acoustix Mk2 prove it to be a very well-designed loudspeaker. *Steve Holding*

Readers should note that the results mentioned in the report, tabulated in performance charts and/or displayed using graphs and/or photographs should be construed as applying only to the specific sample tested.

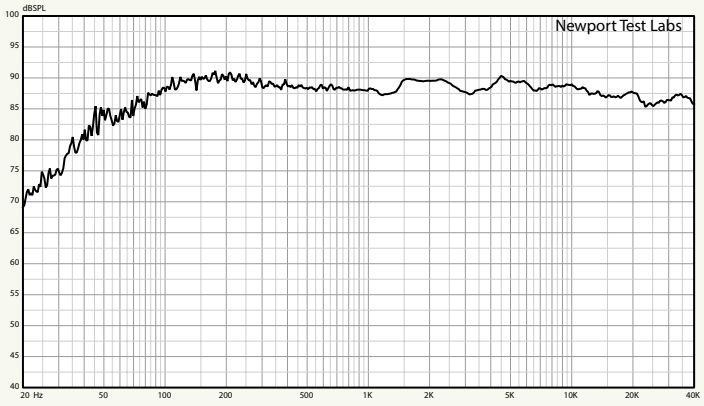

Figure 1. Frequency response. Trace below 800Hz is the averaged result of nine individual frequency sweeps measured at three metres, with the central grid point on-axis with the tweeter using pink noise test stimulus with capture unsmoothed. This has been manually spliced (at 800Hz) to the gated high-frequency response, an expanded view of which is shown in Graph 2. [Krix Acoustix Mk2 Loudspeaker]

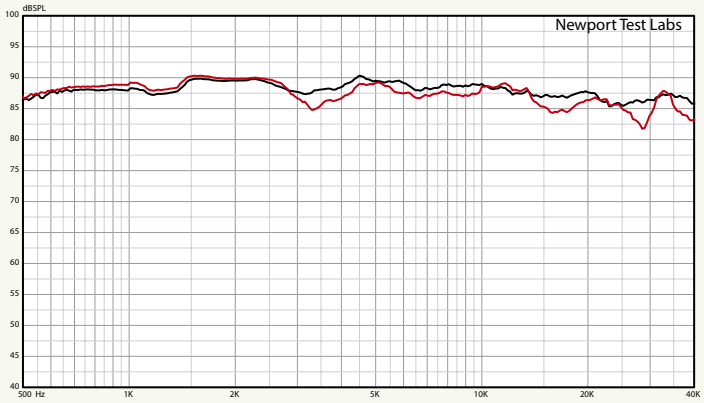

Figure 2. High-frequency response, expanded view. Test stimulus gated sine. Microphone placed at three metres on-axis with dome tweeter. Black trace without grille, Red Trace with grille fitted. Lower measurement limit 500Hz. [Krix Acoustix Mk2 Loudspeaker]

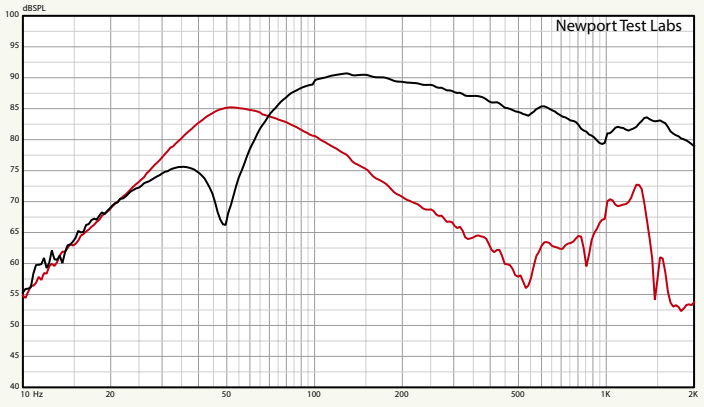

Figure 3. Low frequency response of front-firing bass reflex port (red trace) and woofer. Nearfield acquisition. Port/woofer levels not compensated for differences in radiating areas. [Krix Acoustix Mk2 Loudspeaker]

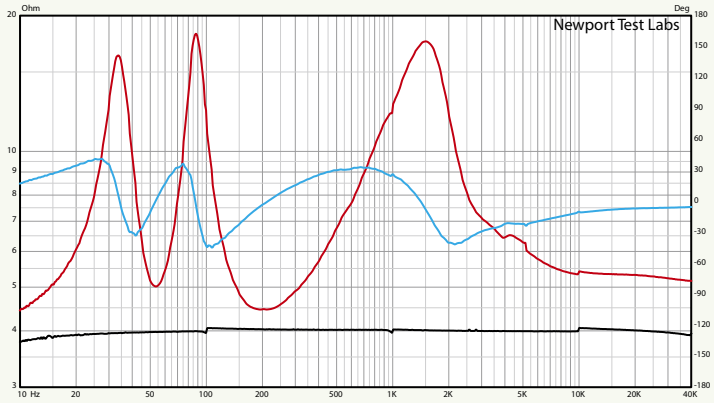

Figure 4. Impedance modulus (red trace) plus phase (blue trace). Black trace under is reference 4-ohm precision calibration resistor. [Krix Acoustix Mk2 Loudspeakers]