

Sound From Silence

A budget phono stage that's silent until the music plays. Noel Keywood is impressed by the iFi Zen Air.

Something fascinating me is the way quality audio products (as I'll choose to call 'em) are being developed and presented. It's all getting interestingly technical and this little £99 phono stage from iFi is right in-idiom here, making me smile. So here's a close look at iFi's Zen Air phono stage, with what's under the hood and why it matters.

As iFi make clear in their on-line description, a phono preamplifier like this exists to amplify the low output from a turntable's pickup cartridge and equalise it, to suit the line input of an amplifier that lacks such ability. But as iFi say it is also an

inexpensive upgrade for the built-in phono stages common on Chinese manufactured turntables, as I'll cover in more detail later.

Seemingly there's little to this tiny device. It suits both moving magnet (MM) and moving coil (MC) cartridges, the latter representing the higher end of the market. To keep cost down I presume, there's no power supply! Yep – zilch. Instead you get a short (660mm) lead that connects it to a standard USB 5V (1A) 'phone charger. I suspect this lead will be too short for many situations since it won't reach from a shelf to the floor.

A continuity check showed the case is not connected to mains ground to avoid the possibility of

hum from a hum loop – common practice nowadays with mains-isolated low voltage supplies. Also helpful toward silence when the MC input has high gain of 64dB to cope with low output MCs – as this one does measurement showed.

As its name suggests the Zen Air is small and airily light, weighing just 317g on our scales. At 158mm wide, 35mm high and 112mm deep it will fit in anywhere, but the shape means vertical mounting will require a bit of DIY. Consuming 1.8W max, heat is not an issue. Inputs and outputs are unbalanced phono sockets only; if you want to go balanced expect to pay more.

Now to get a bit techie. For





A simple, featureless front panel with small blue LEDs and legends. The Subsonic filter at right suppresses warp signals caused by vertical stylus movement, whilst not affecting signals from lateral stylus movement that produce centre-stage bass. Its affect is modest overall so heavily warped records are best avoided.

MM cartridges the Zen Air offers x100 (40dB) gain which is right out of the textbook. This is usefully more than the x60 (36dB) of Chinese-turntable internal phono stages so there'll be more volume if you use it as an upgrade. Also, the Zen Air has higher overload values and lower distortion than such stages. Input impedance is a standard 47kΩ for MM.

Moving on to MC things get a little interesting. The high 64dB gain figure here means all MCs are suitable, even those with very low output. Great, providing noise doesn't increase commensurately. And this is where the little Zen shines. It has super-low noise, by using special input transistors. Getting noise down in electronic circuits of all sorts is a fundamental issue and here the unprepossessing Zen Air moves ahead of much else, even though it isn't obvious from the specs. Read them and you see something called "equivalent input noise" which I'll absolutely not try and explain here, other than say it is the only valid figure to use. Our measurement showed an input noise value way below what is common, making hiss inaudible even with low output MC cartridges. Exceptional at any price.

A small slide switch at rear selects MM or MC and in addition to raising gain for MC it switches in a 1kΩ input load. Not the usual 100Ω value but higher to be compatible with the few MCs out there that require a 300Ω load minimum. These are usually high output MCs designed for an MM input and are best used there since

they may well overload the Zen Air's MC input, because it has such high MC gain.

At right on the front panel there's a Subsonic button and here again things get interesting. It attenuates bass only from the vertical movements of a stylus caused by warps, whilst not affecting lateral movement. Since bass on an LP is mainly from lateral signals, such as centre-stage drums, the filter affects this little. It's not a drastic filter in any case measurement showed, rolling off bass output slowly at extreme left and right. So no big affect upon warp signals that cause loudspeaker

smile to my face because the use of audiophile components is still rare, even though special parts have always been available.

SOUND QUALITY

The Zen Air was connected to our PrimaLuna EVO 300 Hybrid amplifier, driving Martin Logan ESL-X hybrid electrostatic loudspeakers through Chord Company Signature Reference screened cables. Up front was our Timestep Evo modified Technics SL-1210 turntable with SME309 arm.

This is a high-insight phono stage that majors on analysis, giving me a more intense view than

"the brass of the Syd Lawrence Orchestra in Big Band Spectacular (direct cut) shone vividly"

cone flap but a useful reduction shall I say. With this filter switched off there is full gain right down to subsonic frequencies, so best to use LPs that are not heavily warped.

In keeping with the growing emphasis on the use of high quality audiophile components, the Air has specialised components under the hood iFi tell us. They identify TDK COG capacitors, Panasonic ECU ultra-linear film capacitors, a custom designed OV2637 op amp and – most interestingly – ultra low noise input transistors from Diodes Incorporated. It brings a

I'm used to. Our Shibata tipped Audio Technica VM750SH moving magnet cartridge suited it, the two throwing out strong highs and intense detail with all LPs, even those of intrinsically warm balance like Mark Knopfler's Kill To Get Crimson and True Love Will Never Fade. A review track I know well, it was less laconic and more focussed than usual with intense but sweet highs from the strings of Knopfler's guitar. Incredible focus on his vocals at centre stage too.

I had fair warning of this insight when spinning Goldfrapp's Supernature early on, ripping



At rear, gold plated phono input and output terminals, an earth pillar and small MM/MC slide switch. This actuates internal switching to change both gain and load, logic circuits managing the change over to prevent thumps.

synthesiser pans swung across the sound stage hard left to hard right in vivid fashion, a demonstration of stereo staging and high frequency precision.

Pressing the 45 button I put on Dire Straits Brothers In Arms from Mobile Fidelity and Walk of Life. Again a lot of attention to high frequency detail with shimmering highs from ride cymbals, plus a dry but solid thump from kick drum. This preamp has bass that goes low but it doesn't dominate.

I was encouraged to go a little further and naughtier so put on an old 12in single, Carol Kenyon's Dance With Me. Cut to high level as a 1980s disco single it has a pounding synth bass but my attention was drawn to left and right highs and the way the disc had been mixed to exploit stereo panning. Kenyon's vocals were clear as I've heard them, if lighter in timbre than I am used to.

As measurement had revealed, with our Audio Technica OC9X SH Shibata tipped moving coil cartridge there was no hiss at all – deathly silence! The sound stage stretched deeper and was manicured in its cleanliness. The Zen Air teased out detail and was lightning fast, if not warm or romantic, the drumming of Sing, Sing, Sing coming over as tight and fast, whilst the brass of the Syd Lawrence Orchestra in Big Band Spectacular (direct cut) shone vividly. With moving coil the Air was massively forensic and insightful whatever I played.

Old LPs played to death in the sixties survived the insight, even if what was going on in the studio with John Mayall and his Bluesbreakers in Bare Wires (Decca, 1968) was made more obvious!

CONCLUSION

The Zen Air is an almost worryingly good phono stage at a technical level. With just about no hiss or hum it was stunningly silent even when I turned volume right up with a moving coil cartridge. The MC input has unusually high gain too, so will accept very low output cartridges.

The sheer insight and level of detail was extraordinary, but this did put upstream quality of LP and cartridge under a microscope. There was little warmth or smoothing of blemishes: like a hi-res camera it revealed warts 'an all. Nevertheless, astonishing ability for just £99 and highly recommended.

MEASURED PERFORMANCE

Frequency response measured ruler flat from 20kHz down to 4Hz via MM and 10Hz via MC, our analysis showing the latter. The iFi Zen Air is accurately equalised to RIAA with Subsonic filter off. With filter switched in bass is rolled off slowly by a simple -6dB/octave first order filter at left and right out-of-phase signals but not on a centre-stage mono signal. It is not a strong filter even on vertical signals, introducing mild 8dB cut at 5Hz, so heavily warped records are best avoided.

Gain values were a standard x100 (40dB) with MM but a high x1600 (64dB) for MC – higher than the common x1000 (60dB) figure of most MC phono stages. The drawback of such high gain is lower input overload ceiling. The Zen Air swings a healthy 9.7V rms output but this translates back to 6mV in where 10mV is common. No disaster but this is not an input suited to high output MCs.

Input load values are 47kΩ for MM and 1kΩ for MC. If this was 100Ω as per usual it would usefully reduce the output of high-output MCs.

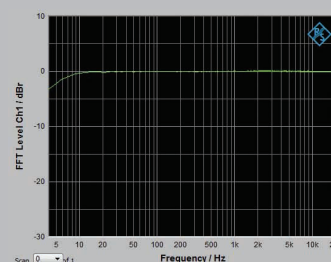
Noise measured 70μV (IEC A wtd) out at x1600 gain, giving an extraordinarily low input noise figure of 0.04μV, about half the value of an input transformer (0.08μV) that is otherwise

the quietest possible for an MC input.

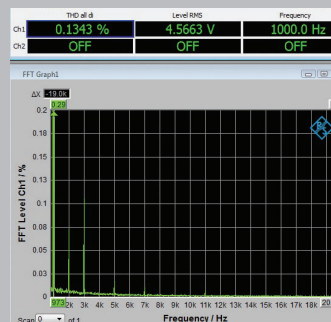
The measured performance of this phono preamp was exceptional. **NK**

Frequency response 4Hz-20kHz
Distortion (MC, 3mV in) 0.14%
Gain (MM/MC) x100 / x1600
Overload (MM/MC) 95mV/6mV
Noise (e.i.n.) 0.04μV

FREQUENCY RESPONSE



DISTORTION



**IFI ZEN AIR
PHONO £99**
 **£**
**OUTSTANDING - amongst
the best.**

VALUE - keenly priced.

VERDICT

Vivid insight and detail, no noise. A riveting listen.

FOR

- deeply insightful
- highly detailed
- no hiss or hum

AGAINST

- lacks warmth
- needs a longer power lead

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