

Plus Point

The uPhono+ phono stage has a lot of points in its favour thinks Noel Keywood.

If you want to record LP as a digital file there aren't so many options. Furutech and Pro-Ject have some fine 'digital' phono stages able to do this and Unison Research join the fray with their uPhono+ I am reviewing here. It's purposed to act as a high quality moving coil (MC) and moving magnet (MM) preamplifier with optional volume control output, but additionally has digital outputs – price £999.

The uPhono+ is a compact but well built little unit, measuring 216mm (8.5in) wide, 82.5mm (3.25in) high and 246mm (9.69in) deep – easy enough to fit into any system. Unlike so many rivals though, including those mentioned, Unison Research steer an all-analogue path with the uPhono+. No external switch-mode wall-wart power unit here, instead an on-board linear supply with separate analogue

and digital sections for best sound quality. As a result it has direct mains connection through the commonly used 3-pin IEC power connector and inside lies a neat little toroidal mains transformer. Weight is 2.6kgs (5.73lbs), partly due to a 10mm deep solid alloy face plate. Behind this plate is a folded steel chassis comprising base and cover.

The front carries an Alps Blue Velvet volume control, a blue power light and a 1/4in (6.3mm) headphone jack. The volume control affects not only the Variable rear outputs but the headphone jack too. Meaning the uPhono+ can drive a power amplifier direct as well as headphones, making it the basis of a high quality vinyl-only system. Switch on is inconveniently by a small rocker switch at rear but power consumption is 6 Watts maximum so it won't break the bank if left on.

There are both MM and MC phono socket inputs at rear but both cannot be used at the same time. uPhono+ is set to suit one input or the other through banks of small DIP switches underneath, including a small MC/MM master switch that moved alarmingly when altered; it needs securing methinks. Those who have two turntables, one MM and one MC will find input selection a headache. Otherwise, the unit is pre-set to accept MC or MM and left at that.

For MM cartridges the input load is a fixed 47k Ohms as usual, with four capacitance options: 100pf, 200pF, 320pF or 420pF that finely tune frequency response.

For MC cartridges the options are broader. Here there are no fewer than seven load options, printed on the amplifier as: 20, 50, 100, 150, 250, 500 and 1000 Ohms. The 100 Ohm setting is standard, but some



high output MCs need 500 or 1000 Ohms. The low 20 and 50 settings are for experiment with low output designs, giving a slightly more damped sound – but subjectively I find differences minuscule to ignorable.

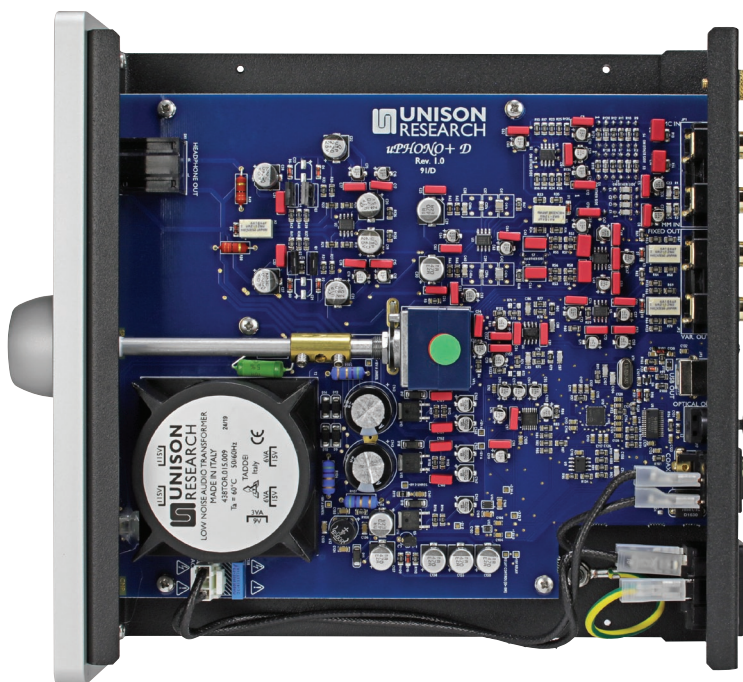
More significant are two gain settings, labelled as 58dB and 69dB. The former suits most MCs and gives highest overload margin, the latter suits very high gain low output types.

And finally there are also DIP switches to select a warp filter, labelled 'IEC filter'. Unison Research have tailored this to reduce loudspeaker cone flap with warped LPs, without obvious subjective loss of bass (unlike a true IEC bass filter).

All switch options are duals, for Left and Right channels independently, so two little white sliders must be moved, possible by hand but easiest with a small screwdriver. There are a wealth of options then, to suit most cartridges out there, but set up is a fiddly process.

The rear panel has fixed outputs to suit an integrated amplifier with volume control, plus variable outputs to drive a power amplifier direct. There are no balanced XLR outputs however – useful to drive long lines to an integrated or power amplifier with balanced inputs.

And finally there are S/PDIF digital outputs, optical and electrical,



A neat circuit board populated with tiny surface mount (SMD) components and larger parts too, including an Alps Blue Velvet volume control at centre, connected by shaft to the control knob.

At bottom left lies the circular toroidal mains transformer of the linear power supply.

plus a USB output. Inside lies a Cirrus Logic CS5341 analogue-to-digital convertor (ADC) that offers up to 24/96 resolution. USB is delivered by a Bravo SA9137 transceiver. To record digitally you must use a music editor of some sort on the computer: I use Audacity which is free for Mac and PC. It is a bit expert

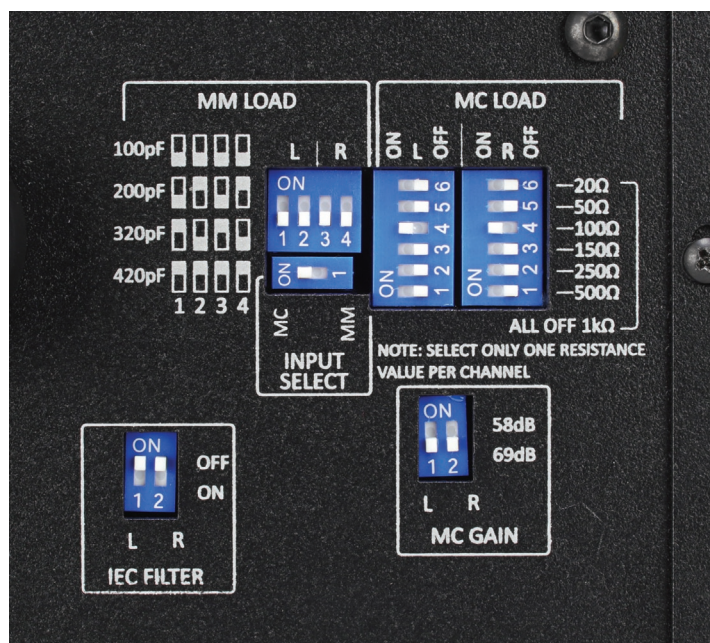
(daunting!) but does a fine job once understood.

SOUND QUALITY

To start with I connected the uPhono+ to our Creek Evolution 100 transistor amplifier and Martin Logan ESL-X hybrid electrostatic loudspeakers, connected by Chord Company Signature XL cables. Up front was our in-house Timestep Evo Technics SL-1210 Mk2 Direct Drive turntable with SME309 arm, fitted with Ortofon A95 MC cartridge.

This combination didn't work too well; the A95 is a bit dry and the uPhono+ quite tight in its sound. Installing our Icon Audio Stereo 30SE valve amplifier helped but was not the answer. Removing the Ortofon A95 and replacing it with the more fulsome and bass-strong Ortofon Cadenza Bronze had the system settle into a natural balance. Point being, the uPhono+ is coolly correct rather than warm or heavy and benefited from the Bronze sound.

With the system in harmony, Hugh Masekela playing Uptownship, from Analogue Productions (180gm), the uPhono+ was precise and clear, with good weight to the bass line. There wasn't the dimensionality possible from more expensive designs but it was still concise and detailed, with plenty of midrange projection,



Banks of small DIP switches on the underside provide a wealth of adjustments for both MM and MC cartridges. Input select MC / MM means one or other can be used through the rear inputs, not both (i.e. two turntables).



The rear panel carries a mains input – no external wall-wart supply here. Note also the rocker-style mains switch beside it. Beneath this switch lie the digital outputs: optical and electrical S/PDIF, plus USB. Big gold plated blanking (shorting) plugs are supplied to quiet the unused input – a nice touch.

making Masekela's trumpet obvious in the mix.

Neil Young's After the Goldrush (analogue remaster, 180gm) had firmly outlined images and a broad sound stage, if one limited in depth perspectives.

The opening bass line in Dire Straits So Far Away (Mobile Fidelity, 180gm analogue remaster, 45rpm) had solidity and a crisp sense of pace. Overall I heard a well ordered sound here that ticked most boxes and this is how the uPhono+ played out over a wide variety of high

quality test LPs. It didn't quite wow me like Charisma Audio's Musiko I reviewed last month but then it offers more – notably digital – and costs less.

Digital recordings on a MacBook Pro were clean and deeper than those from the slightly hazy 16bit converters found elsewhere, and here the 24bit Cirrus Logic CS5341 proved its worth, just about matching the dynamic range of LP (73dB). The uPhono provides quality recordings – should you want to send vinyl to

digital, perhaps to preserve valuable LPs.

CONCLUSION

Unison Research have packed a lot into the uPhono+. With volume control, headphone output and high resolution 24bit digital outputs it has broad ability. Add in MC and MM cartridge compatibility, plus imperceptible hiss with MC and you have a phono stage that just about does it all, at a good price. Well worth considering; a fine little unit designed with care and understanding.

MEASURED PERFORMANCE

Frequency response of the uPhono+ runs flat from a low 6Hz up to 20kHz our analysis shows, with either MM or MC selected, even at full MC gain of 69dB where some stages run out of low frequency gain. The 'IEC filter' (it isn't) rolls off gain below 40Hz to -12dB at 5Hz to suppress warps, this being a gentler and more appropriate filter than the real IEC curve that drastically and audibly cuts bass.

Gain with MM was a useful x88 (39dB) through the Fixed output, just below the x100 (40dB) value that's commonly used. With a high output swing of 9.2V this set input overload at 105mV, well above the 30mV or so that high output MMs can deliver. Through the Variable output there was a peculiar 1.5V output limit. Since most power amplifiers need only 1V for full output this output ceiling is sufficient. Gain was the same (at full volume) and input overload 100mV (at low volume).

Gain with MC was a normal enough and useful 59dB (58dB quoted) and 68dB at high gain (69dB quoted). Confusing

differences but inconsequential in use. The high gain value is for very low output MC cartridges, overload being 3.6mV in. The 58dB quoted value is best used and has a satisfactory input overload ceiling of 10mV.

Input noise with MC (max gain '69dB') was a low 0.16µV (IEC A wtd), making hiss all but inaudible even at high volume. Not the very quietest but getting close and sufficient for low output MC cartridges.

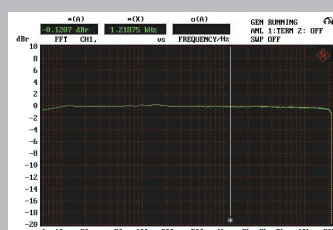
The headphone output delivers a high 6V maximum (2V is more than enough) but at half volume 1V – very loud through most headphones.

The digital section has full output (0dB FS) set at 7mV in for MM and 0.7mV in for MC (58dB). Budget ADCs are set low to maximise their limited dynamic range; here the 24bit Cirrus Logic ADC overloads on occasional peaks but managed 75dB EIAJ Dynamic Range. Distortion at -60dB was a not wonderful 3.6% but bandwidth wide, reaching 40kHz (-1dB).

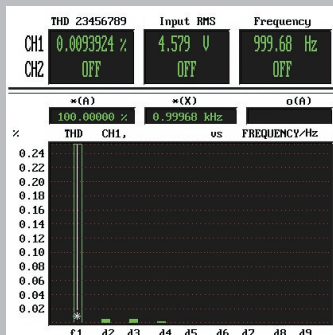
The uPhono+ measured well in all areas, impressive considering complexity versus price. **NK**

PHONO (MM/MC)
Frequency response (-1dB) 4Hz-20kHz
Distortion (1kHz, 5mV in) 0.01%
Separation (1kHz) 69dB
Noise (IEC A, e.i.n.) 0.15µV / 0.11µV
Gain (MM, MC) 39dB / 59dB, 68dB
Overload 9.2V out

FREQUENCY RESPONSE



DISTORTION



UNISON RESEARCH
uPHONO+ £999

OUTSTANDING - amongst the best.

VALUE - keenly priced

VERDICT

A phono stage with broad ability and clean sound, plus 24bit digital. Worth hearing.

FOR

- Broad ability
- tidy sound
- 24bit digital

AGAINST

- DIP switches
- rear power switch
- no XLR out

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