MM/MC phono preamp with digital outputs
Made by: McIntosh Laboratory Inc., Binghamton, NY, USA
Supplied by: Jordan Acoustics Ltd, Dorset, UK
Telephone: 01202 911886
Web: www.mcintoshlabs.com; www.jordanacoustics.co.uk
Price: £2750

McIntosh MP100

Want to build a digital archive of your treasured vinyl but don't wish to trade your high-end deck for a 'USB turntable'? McIntosh's new phono stage offers a solution
Review: **Ken Kessler** Lab: **Paul Miller**

It's not as if McIntosh is new to vinyl. Born in the analogue era, its preamps always accepted phono signals, but long before its own branded turntables were added, only just this century, the company had once experimented with its own – and sadly ill-fated – cartridge and phono amp. Still, it's a surprise to learn that the MP100 is the sixty-something brand's first standalone phono stage. The 'affordable' £2750 price is but the first of its surprises.

Surprise number two must be that it's totally solid-state, while a third is its lack of the signature blue meters – and a fourth would be the compact dimensions and weight. Those who would prefer something that stacks with their traditional Mac gear should note that, at CES in January, the company unveiled the full-width, all-valve MP1100 *with* meters, and a digital display.

LETTING RIP

But back to the MP100 and the biggest surprise of all is that it has an A/D section, with a USB output that allows you to 'rip' and store digitised copies of your LPs with suitable software.

I suppose that all of this modernity is the outcome of McIntosh being the key component of the McIntosh Group, a band of brands that started as Fine Sounds, evolved into the World of McIntosh and finally settled on the name that suggests a bunch of Scottish lawyers. Its siblings are Sonus faber, Audio Research and Wadia, which makes for a completely self-contained roster covering most flavours of audiophile tendency.

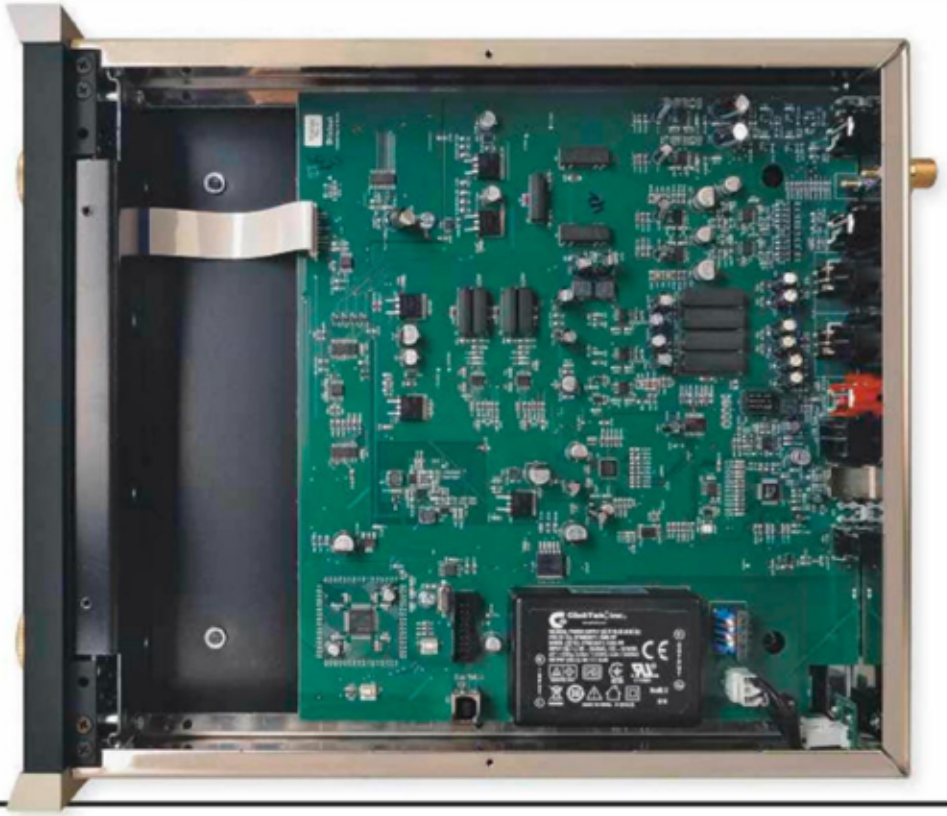
Despite the size of the MP100 and what we now know is 'entry level' status (revealed by the arrival of its larger sibling) McIntosh ensured that the MP100 customer would want for nothing. It features separate MM and MC inputs, albeit each with fixed gain, and the loading is adjustable. Unlike units such as the EAT E-Glo (admittedly at twice the price), the two sets of inputs do not accept both MM *and* MC, so if you run two record decks, one can be a traditional low-output MC while the other must be an MM design, or an MC with high enough output to work in an MM input.

PROGRAM OPTIONS

This ripping element – not, admittedly, the first high-end solution of LP transfer to digital form – certainly should enhance the appeal of the MP100 for vinyl users of all stripes. Archivists are the most obvious of target customers, as are veteran audiophiles who use vinyl and digital playback, *eg*, on the go with high-res portables. Newcomers to vinyl will love how it enables them to enjoy the venerable format without forsaking their contemporary playback methods! Editor PM explains it in detail [see boxout, facing page], but briefly, I downloaded VinylStudio to my Mac Air and was copying an LP within five minutes. However, the sound without tweaking was obviously not a patch on the LP itself, but this is no reflection on the MP100 – you do have to adjust the parameters in the program. There are loads of options available for the task – Roxio Easy LP, Audials TuneBite, *etc* – but don't expect miracles without a little work on your part. While adding an MP100 to your system effectively turns your record deck into a 'high-end USB-equipped turntable', it is not a 'no-brainer' solution.

Personally I have no intention or desire ever to copy LPs to a computer but, suffice it to say, if you are inclined to ripping vinyl, and want something better than the exceptional, affordable but minimalist NAD PP4 phono amp, the MP100 should certainly go on your shortlist.

So perfect was the timing of the MP100's arrival that I was up and running



RIGHT: This phono preamp is equipped with an 768kHz/32-bit capable ADC (the AK5552 from AKM) that's used to digitise the equalised signal. Eq is active, using chip transistors and op-amps

in minutes – I had just finished reviewing the E-Glo S phono preamp [*HFN* Mar '17] so this was a drop-in situation. (I hadn't even put the review LPs back in the rack.) This had the added benefit of providing not just a streamlining of the ritual, but a perfect point of comparison, especially as the prices were nearly identical, with only £50 between them.

Conversely, the two phono stages were so different that they don't belong on the same shopping list, so your needs, as much as your sonic biases, will eliminate one or the other.

> 'The MP100 has a remarkable coherence and command'

Not least for some of you, the E-Glo S offers a greater number of values for the cartridge adjustments and is a valve/hybrid product. Equally, the MP100's LP ripping and the facility to handle two decks provide a different level of benefits that might better suit your needs.

In other words, one might cancel out the other because of the specific functionality, tube versus tranny topology and other considerations. But then, so does the sound, should the features not determine your choice.

As with the E-Glo S review, I used this with SME 30/12 and Clearaudio Goldfinger MC [*HFN* Jan '15] and Linn LP-12 with Arkiv, with an SME 30/Series V with Shure V15Vxmr alongside. While the initial listening took place through my Audio Research REF 6 [*HFN* May '16]/REF 75SE amplification and through Wilson Alexia floorstanders [*HFN* Mar '13], I also used the MP100 with the Quad Classic Integrated [*HFN* Jun '11] and Spendor 11ohm LS3/5A speakers and KEF's multi-award winning LS50s [*HFN* Jul '12].

SPEED OF ATTACK

The MP100 underwent a one-hour warm-up before auditioning, but it didn't make much difference over its sound from cold. Unlike the E-Glo S, the MP100 has XLR balanced outputs, which were the means by which I assessed its ultimate score. My remarks directly relative to the E-Glo S refer to playback via its single-ended phonos.

DIGITISING VINYL

McIntosh has opted for 96kHz/24-bit sampling and quantisation (digitisation) of the RIAA-equalised signal – its ~45kHz bandwidth more than sufficient to capture the response of any vinyl LP. The digital signal is output via coaxial and optical and may be captured directly by any digital recorder with an S/PDIF input (CD-R recorder or PC soundcard). The same data is also output via USB and may be captured by the USB input of your PC or Mac, the former requiring third-party driver software available from McIntosh's website, and then stored as a WAV or FLAC file via one of a myriad computer audio recording tools.

But which of McIntosh's 'Hi' or 'Lo' digital (input sensitivity) settings do you choose? Via the MM input, the 'Lo' setting requires a full 41.8mV and the 'Hi' setting just 1.45mV to achieve a full scale 0dBFs digital output, indicated by the orange 'Clip' LED on the MP100's fascia. This is equivalent to a (balanced) analogue output of 8500mV and 3000mV, respectively. The MC input requires 4.18mV and 1.45mV with Lo and Hi sensitivity options to achieve a full scale 0dBFs digital output. As these levels are already significantly lower than the headroom available in pure analogue mode, I'd recommend owners use the 'Lo' setting regardless of choice of MM or MC pick-up. PM

ABOVE: Fascia couldn't be clearer with rotaries for MM and MC settings, rocker buttons for mono, MM/MC input, digital settings and on/off. Digital aside, you hardly need read the manual

As with the E-Glo S, the LPs used for the tests included the Mobile Fidelity 'One-Step Process' edition of Santana's *Abraxas* [Mobile Fidelity UD1S 2-001 – two 45rpm LPs], the 45rpm double-LP of Bob Dylan's *Highway 61 Revisited* [Mobile Fidelity MFSL 2-463], The Police's *Ghost In The Machine* [Universal AHRSLP005, half-speed master] and Johnny Winter's *The Progressive Blues Experiment* [Imperial LP12431].

An interesting demarcation emerged with the way the two handled The Police's 'Every Little Thing She Does Is Magic', such that it freed me from writing this as a comparative review. While many believe it's debatable that there's such a thing as tube vs transistor sound, the sheer speed of attack and crispness of the sound via the MP100 was enough to confirm the E-Glo S's undiluted valve-ness.

SCALE AND MAJESTY

This is not a value judgement but a statement of character, and it immediately forces the listener with a predilection toward one or the other to make a choice. Indeed, the solid-state versus tube nature begs the need to hear the MP100's newer sibling, wherein it will be compared to a valve unit from the same stable.

Given that the MP100 exhibits all of the virtues of solid-state performance, including a not unpleasant 'cleaning' of the sound and a slight coolness some may prefer to a valve's warmth, the most remarkable aspect of its performance was the overall coherence and command relative to its price.

Staying with The Police, and listening to Stewart Copeland's powerhouse drumming, the MP100 showed its ability to convey both scale and majesty. At that crucial 35-second mark, when Copeland goes full-on berserk, the percussion ⟳

ABOVE: Single gold-plated RCAs for connection to MM and MC pick-ups are joined by RCA and balanced XLR analogue outs plus coax/optical S/PDIF and USB digital outs

delivered a visceral punch evident over both the large and small systems. While it was not as 'airy' as my steadfast all-tube EAR 834P, neither was it as closed-in as I have come to expect of many transistor stages. It also handled the bass sympathetically, with a natural flow and surprising, almost tube-like, richness. But where the MP100 most challenged my prejudices was in the upper regions.

SELECTING MONO

Because of the intricacies of the sounds generated by a bottleneck played on a National Steel guitar, with its mix of chiming and ringing sounds applied to the already-complex nature of any electric guitar, the Johnny Winter tracks were a rich source of challenges for the MP100. Crucial to conveying the distinct character of the instrument – whether a National Steel, or a regular guitar played with a bottleneck – are the leading edges of the notes, followed by the fluidity of the sliding notes.

While bottleneck recordings are natural allies of sound systems known for 'liquidity', solid-state can dry out and reduce the shimmer that is as important to bottleneck as woody tones are to an acoustic guitar. The MP100, more so with MC than MM, had no trouble in delivering those occasionally chilling but always hypnotic effects. The juxtaposition of teeth-jarring metallic resonances with the silkiness of the slides is the basis of the appeal.

As is becoming increasingly popular, the MP100 has a mono selector, which drew me to the Bob Dylan 45rpm monos just released on Mobile Fidelity. Even though I didn't swap to a mono cartridge, I did play the LPs while flicking the switch and noted a distinct improvement in the solidity of the sound. This is less an observation about the MP100's performance than it is of using a mono switch (let alone a mono cartridge!), but if you're inclined to play mono LPs, this is a bonus.

Because of the amazing detail afforded by the 'One-Step' release, the multi-instrumental interplay and Latin rhythms of the Santana release act as both tests of a product's ability to retrieve all that it is fed and then convey it unsullied, as well as complementing the sound of any system almost to a point of deception. The argument is that the LP sounds so good that it will make any system sound better. The defence is that the system can only ever sound as good as its inherent abilities will allow it to be. In other words, yes, a fantastic recording will make a system sound good, but no better than its intrinsic capability.

As Santana's guitar work differs markedly from Winter's, and as the percussion on any Santana release has a more prominent role than drumming is usually afforded, the *Abraxas* set was a good test of the MP100's way with keeping on top of the rhythmic content, the interplay of the individual instruments and the barrage of rapidly changing notes. There was no muddle whatsoever, the MP100 disseminating the wealth of material with a sure hand.

Again, it was aided by its transient capabilities, which are impressive at both the leading edge and at the cut-off, while the transparency and 'open window' nature were an invitation to focus on specific notes.

HI-FI NEWS VERDICT

Looking at the MP100 solely for performance rather than features – either of which are equally valid reasons for making one's choice – this is a clean-sounding, detailed, commanding phono amp that also represents excellent value. It's compact, beautifully-made in the McIntosh manner and easy to use. Once the features are accounted for, especially XLR balanced out, you realise that it's actually something of a bargain.

Sound Quality: 86%

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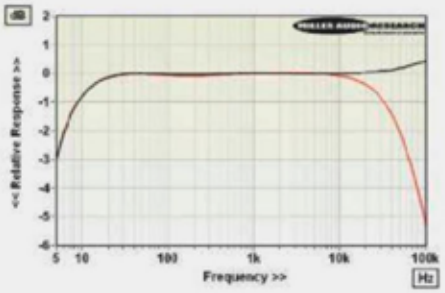
LAB REPORT

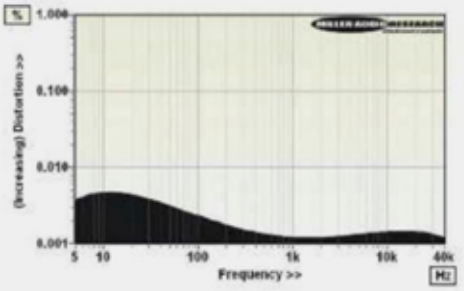
MCINTOSH MP100

While the MP100 benefits from separate MM and MC inputs (servicing two turntables or arms independently), there is no choice of gain within each setting. McIntosh rates the input sensitivity of the MM option as 10mV and the MC option as 1mV (both for a 2V output) which equates to a gain of +46dB and +66dB, respectively. This was met on test at +46.4dB and +66.4dB via the preferred balanced XLR output, this offering a substantial 18.3V maximum from a 100ohm source impedance (increasing to 380ohm at 20Hz). This combination of gain and maximum output confers a generous input overload margin for MM and MC amounting to 92mV and 9.2mV (+25.2dB re. nominal IEC sensitivities of 5mV and 500µV). This is more than adequate to accommodate the wildest groove modulations tracked by the highest output MMs, although the same cannot be said for the digitised version of the MP100's equalised output [see boxout, p51] where greater caution is advised.

Back in the analogue domain, distortion is fractionally higher at low frequencies but, otherwise, reaches a low 0.001-0.002% through the midrange [see Graph 2, below]. This is between 100-1000x lower than possible from most pick-ups over their nominal range of operation. Channel balance (±0.1dB) and separation (70-80dB) is also superior to any pick-up while the A-wtd S/N ratio of 84.7dB via MM is some 10dB better than the lowest typical 'vinyl roar'. The 81dB achieved via the MC input is a superior result bearing in mind the additional +20dB headamp employed by this stage. Finally, the equalised frequency response [Graph 1]: this has a limited subsonic rolloff amounting to –0.7dB/10Hz to –3dB/5Hz but our sample was 'flatter' and more extended at HF on the left (+0.4dB/100kHz) than the right channel (–5.3dB/100kHz). **PM**



ABOVE: RIAA-corrected, extended frequency response, 0dBV out (left, black; right, red)



ABOVE: Distortion versus extended frequency (5Hz-40kHz) with RIAA pre-emphasised MM input

HI-FI NEWS SPECIFICATIONS

Input loading (MM/MC)	47kohm/250ohm-1kohm
Input sensitivity (re. 0dBV, MM/MC)	4.79mV / 479µV
Input overload (re. 1% THD, MM/MC)	92mV / 9.2mV
Max. output (re. 1% THD) / **Imp.**	18.3V / 98-380ohm
A-wtd S/N ratio (MM/MC, re. 0dBV)	84.7dB / 80.9dB
Frequency response (20Hz-20kHz)	–0.1dB to +0.04dB (L) / –0.4dB (R)
Distortion (20Hz-20kHz, re. 0dBV)	0.0012-0.004%
Power consumption	6W (1W standby)
Dimensions (WHD) / **Weight**	292x96x425mm / 3.9kg