

McIntosh MP100

ANDREW HARRISON REVIEWS MCINTOSH'S FIRST EVER PHONO STAGE, COMPLETE WITH D-TO-A CONVERSION

The McIntosh Laboratory has been around for almost 70 years, but it wasn't until late last year that it launched its first dedicated phono amplifier, the *MP100*. It's a phono stage that's well stocked with features for the category, with separate switchable inputs for moving-coil and moving magnet cartridges, balanced XLR outputs, plus a wide range of cartridge loads, accessible without the aid of a screwdriver directly from the front panel. However, for some users the star attraction may well be the built-in 24-bit/96kHz ADC, for making digital recordings of LPs.

A glance at the photo doesn't necessarily show the scale, but the *MP100* is actually a midsize McIntosh, not designed to stack with its usual pre- and power amplifiers (nor indeed the similarly full-width *MT5* plug'n'play turntable that McIntosh now sells). It could, however, sit on top of the company's bijou mid-width *MXA70* music system, matching *MB50* stream player and *MHA100* headphone amp.

That small chassis would make it tricky for McIntosh to include a full suite of valves and a linear power supply, so the *MP100* uses neither. Instead this advanced phono amplifier draws on many of today's consumer electronics tricks: surface-mount devices, compact switch-mode power supply, embedded ARM processor, digital convertor, and USB ports inside and out. The McIntosh tradition of the very green front panel is fully maintained, with gothic black logo, polished metal knobs and mock lab handle cheeks. Once powered up, the *MP100* stays fully lit with no dimming or blackout options.

The front has two ratcheted control knobs are mounted symmetrically to adjust moving-magnet capacitance loading (left) and moving-coil input impedance (right). These allow six options each, of 50, 100, 150, 200, 300 and 400 pF; and 25, 50, 100, 200, 400 and 1kohm. Voltage gain is fixed at 40dB for moving magnet and 60dB moving-coil.

Four soft-touch electronic buttons ranged between the rotary encoders offer, respectively, mono summing of stereo channels; switching between MM and MC inputs; a two-position 'digital output' selector with clip indicator; and unit standby switch.

The mirror-finish rear panel features one pair each of RCA/phono and XLR analogue outputs, two separate phono inputs for MM and MC cartridges (with earthing posts for each), plus three digital outputs – phono and Toslink S/PDIF, and a USB 2.0 Type B port. Power inlet is a modest two-pin 'figure 8', and thanks to the high-frequency power supply the unit will work from 100 to 240V without adjustment. A pair of 3.5 mm jacks can trigger remote standby and power-up with compatible components; regrettably there's no way to control cartridge loading remotely from the listening seat.

Electronic Design

At heart the *MP100* is a chip-based phono amplifier, deriving active RIAA equalisation through filters within the feedback loop of the initial non-inverting op-amps. A single large PCB fills most of the unit's footprint, with surface-mount devices from the cartridge-loading passive components at one end, to a 120MHz ARM *Cortex-M8* microprocessor and 12MHz crystal clock at the other.

Other updates to the traditional phono stage are the digital convertor and transmitter chips from Asahi Kasei, for direct digitisation of the RIAA stage's analogue signal. Core A-to-D conversion is courtesy of an AKM *AK55532VN*, a 24-bit/768 kHz ADC which here has been throttled back to 24/96-only operation. When queried why, Senior Electronic Design Engineer Ron Evans pointed to the just launched *MP1100* which can operate at either 24/96 or 24/192. (This is a full-width £9,995 phono amplifier with two valves per channel, selectable non-RIAA curves, and rumble and scratch filters.

The AKM convertor chip incorporates four

