Discreet – and discrete!

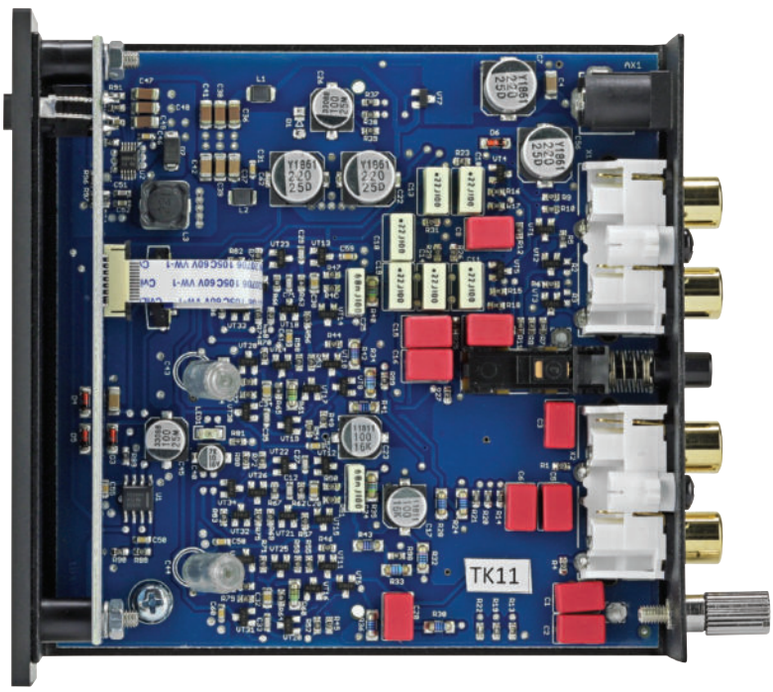
Martin Pipe reckons that Pro-Ject's flexible Phono Box S2 Ultra punches way above its £200 price.

Over the past two decades or so, Pro-Ject has probably done more than any other hi-fi company when it comes to renewing serious interest in vinyl playback among audiophiles fettered by modest budgets. Indeed, the firm was telling us to 'go analogue' at a time when everyone else was sold on digital. And while Pro-Ject offers a worthwhile portfolio of digital products, any of its developments that happen to revolve (!) around those magical black discs will always make us sit up and take notice.

As well as their turntables, Pro-Ject also have a neat line in phono stages. When the firm started its vinyl crusade, integrated phono preamps were disappearing from amplifiers as manufacturers were under the impression that there was no longer any demand for them – in an era when CD had become the primary music carrier. If an amp had a Phono input it was a mediocre MM-only design cost-engineered around an off-the-shelf silicon chip or two.

If you're to get the best from vinyl, a properly-designed phono stage that plugs into a line input (Aux, Tuner etc) can be essential. Such devices are also useful if you envisage using a recorder or PC to archive LPs onto digital media so they can be enjoyed – for example – on the move. Whilst you can pay thousands for a phono stage, the Pro-Ject Phono Box S2 Ultra – which can be configured for MM or MC carts - can be yours for £200 or so.

Despite this, the Phono Box S2 Ultra – a cost-reduced version of the limited-edition £300 Phono Box Ultra 500, built into substantial copper metalwork (for 'heightened' screening) and supplied in a fancy wooden box – is a flexible wee beastie. Inputs and outputs are via phono sockets and there's a ground post. The S2 Ultra's small size ensures that finding a place for it – close to the turntable, maybe? – is never going to be a problem. Part of the reason for those diminutive dimensions is that the power supply is external. The 18V DC needed by the preamp is provided by a 'wall wart' that plugs into a mains socket.



The circuit board of the Phono Box S2 Ultra is busy, full of transistors instead of generic op-amps. Decent-quality passive components, like polystyrene capacitors, are also in evidence. According to Pro-Ject "the split RIAA equalization" implemented with this collection of devices "enables a pin-point accurate representation of the RIAA curve" to be achieved. The unit's only chips are power supply components.

A secondary advantage of Pro-Ject's design is that mains supply voltages are kept away from the sensitive electronics that work with the tiny signals from phono cartridges - improved performance should result. Another route to the best sound is ensuring that the input of your phono stage is matched to the specific characteristics of your cartridge. And this leads us to the S2 Ultra's second concession to flexibility. On the base of the unit are two rows of DIP switches – one per channel – that alter the electrical characteristics of the inputs, so that full compatibility with any cartridge can be achieved.

The instruction sheet supplied with the unit gives the various switch permutations needed to achieve a specific resistance (10 Ohms to 47 kOhms for MM) or capacitance (100 pF to 420 pF), but falls short of providing user-friendly tables for commonly-used cartridges. The gain is also switchable between 40dB (MM) and 60dB (MC).

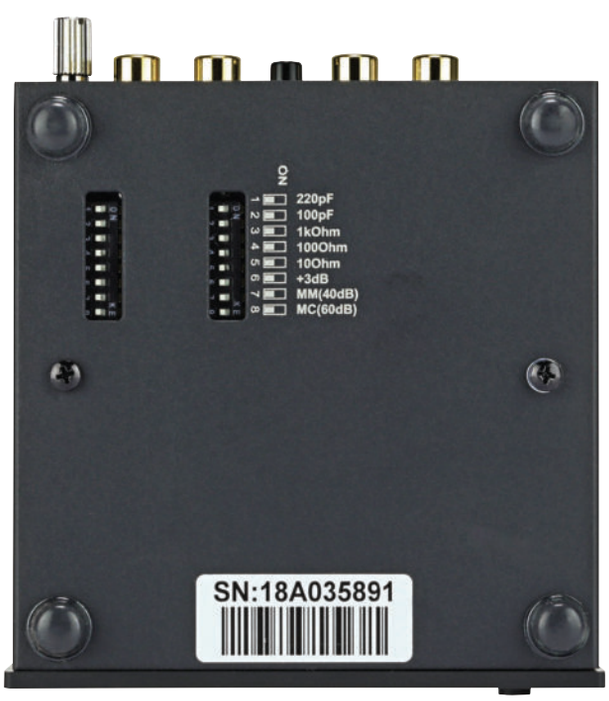
On top of this, a further 3dB of gain can be added at the flick of another tiny switch. This can be useful for lower-output cartridges, or when digitising 'quiet' compilation LPs with numerous tracks.

The third valuable feature is a subsonic filter, which is particularly useful when it comes to dealing with warped records. It's switchable, meaning that your low-end can be left unimpeded if desired to get that sense of deep subsonics LP can provide. If your woofer cones are flapping alarmingly, then best to turn on the filter. All of this is achieved without an op-amp in sight, Project instead relying on discrete transistors – this was standard practice, back in vinyl's 'golden age'. Time moves on in other respects, though; extensive use is made of surface-mounted components. That's how Pro-Ject have managed to make the unit so small.

SOUND QUALITY

I drove two integrated amplifiers with the Phono Box S2 Ultra – an Arcam A49 integrated amp and the Musical Fidelity M2 Si reviewed elsewhere in this magazine, in both cases driving Quadral Aurum Wotan VIII 'speakers. To put the S2 Ultra through its paces, I used two turntables fitted with very different cartridges. One was a Technics SL1200 Mk2 Direct-Drive fitted with an Audio-Technica AT440MLb MM cartridge, the other a Systemdek IIXE900 belt-drive fitted with Alphason Opal arm and Denon DL304 MC cartridge. I matched the cartridge characteristics, as listed in spec sheets, as closely as possible to the S2 Ultra's loading.

The first thing I heard with the Systemdek/Alphason/Denon was just



Two rows of recessed DIP switches – one per channel – enable Phono Box S2 Ultra to be 'matched' to whatever cartridge (MM or MC) you happen to be using. A tiny screwdriver is needed to flip each switch.

Gold plated phono sockets are used for signals both into and out of the Phono Box S2 Ultra. The highly-effective subsonic filter, which deals with problems like warped records, can be switched out of circuit if not required.

"presented with depth, dynamics and a naturally-wide soundstage"

how fulsome and well-defined the lower frequencies are. In Another One Bites The Dust, from Queen's 1980 LP The Game, John Deacon's Chic-influenced bass throbbed powerfully and tunefully – carrying along the track just as intended. Switching to my mid-70s CBS pressing of Simon and Garfunkel's Bridge over Troubled Water I found that the footstomps and bass drum of Cecilia were given the room they need. Flipping the record over, the depth and definition bestowed on the bass harmonica of The Boxer was a joy to behold.

After a quick reconfiguration I found that the Technics/Audio Technica combo fared perceptibly better at the lower end of the scale. However, the reverse was true in terms of treble cleanliness and overall clarity! It is a credit to the resolving-power of the Phono Box S2 Ultra that such differences are laid bare.

My ASV Digital LP of Vivaldi's Concerto in C for Bassoon and Strings (English Chamber Orchestra/ Daniel Smith/Philip Ledger) was presented with depth, dynamics and a naturally-wide soundstage, the subtleties of Smith's bassoon being definable without compromising the orchestral strings that back him. An even older recording (EMI, 1958) of Dvorak's New World Symphony (Berlin Philharmonic/Rudolf Kempe) was also a convincing listen, courtesy of the tonal range and stereo imaging that could be conveyed.

CONCLUSION

It's difficult to find fault in a phono stage that sells for £200 and sounds wonderful. It's sonic success is down to careful design and its ability to accommodate both MM and MC cartridges, as well as the use of discrete transistors rather than silicon chips. Fantastic sound and fantastic value!

MEASURED PERFORMANCE

Gain values were exactly as described, x100 (40dB) for MM and x1000 (60dB) for MC. The +3dB switch is a neat touch that provides exactly the right gain step for low output MMs and MCs, with MC giving a maximum gain from the unit of x1413 or 63dB, measurement showed.

Output overload measured 9.5V. That equates to 95mV input overload for MM and 9.5mV for MC, both good figures our measurements of cartridge output show; the unit will not suffer overload.

Frequency response MC measured flat from 20Hz-20kHz with the highest gain of 63dB – most challenging because inadequate gain causes bass roll off. There is some slight plateau loss of low frequencies, meaning not a bass heavy sound. Switching in the warp filter corrected this as well as attenuating deep bass very quickly. With MM equalisation was more accurate and the warp filter equally effective.

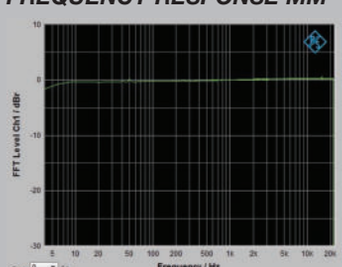
Noise measured a very low 0.15μV (input noise) for both MC and MM. With MM this is way below the thermal noise a cartridge produces. With MC the situation is different – they produce virtually no thermal noise. The 0.15μV value is low and hiss will not be audible except with very low output designs where a faint background hiss at the 'speaker will be audible; super-low noise inputs, typically using transformers, are 6dB quieter. For a budget design however the Phono Box S2 Ultra manages very well and hiss will not be audible with most MCs.

This is a very well designed phono stage that is quiet, accommodates all phono cartridges and has an excellent warp (subsonic) filter. Superb. **NK**

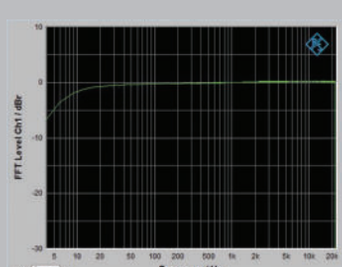
PHONO (MM/MC)

Frequency response (-1dB)	**20Hz-20kHz**
Distortion (1kHz, 5mV in)	**0.04%**
Separation (1kHz)	**68dB**
Noise (IEC A)	**-93dB / -82dB**
Gain (MM, MC)	**x143 (43dB) / x1413 (63dB)**
Overload (MM, MC)	**95mV / 9.5mV**

FREQUENCY RESPONSE MM



FREQUENCY RESPONSE MC



PRO-JECT PHONO BOX S2 ULTRA £200

£

OUTSTANDING - amongst the best

VALUE - keenly priced

VERDICT
This little phono stage does a wonderful job – Pro-Ject should be congratulated!

FOR
- excellent detail and dynamics
- very musical
- compact and practical design

AGAINST
- DIP switches can be rather fiddly
- a 'table' of settings for cartridges would be welcome

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