The Glow Of LP

The valves of Icon Audio's PS3 MkII phono stage bring a glow to LP – and to Noel Keywood's face.

If you spin LP, the change in sound from a mainstream transistor phono preamp to a valve preamp is a revelation. The latter are wide and spacious – and dynamically more supple. But few valve phono stages exist, which is why we've given priority to the Icon Audio PS3 MkII in this issue. It isn't cheap at £2500, but it will transform the sound of vinyl. And that's music to the ears.

What you get in essence is a phono stage with separate inputs for moving magnet (MM) and moving coil (MC) cartridges. The reason is the MC input uses transformers for super-low levels of noise; the PS3 MkII suits very low output MC cartridges like few others, it is so quiet yet has high gain.

At the same time, because the PS3 MkII uses valves, it is just about impossible to overload, whereas transistor preamps still cannot combine high gain with high overload, hence the need for user adjustable DIP switches to juggle one against the other.

So before I go into the details of this phono stage, you can get what it is about: high-quality amplification that suits low to high output

MC cartridges without running into overload. There are no DIP switches to set gains and such like: the PS3 MkII has a simple rotary MM/MC selector switch on its front panel – and that's enough to suit all cartridges.

Also, it has an on-board volume control to adjust output to compensate for high and low output cartridges, but more than this, it means the PS3 MkII can drive power amplifiers direct, making for a simple and pure vinyl system comprising PS3 MkII and power amplifier, with no intermediate preamp. And that's how I ended up using our preceding in-house PS3 MkI – as an all-in-one phono preamp. driving various power amplifiers in for review.

It's particularly difficult to combine a mains power supply with a high gain MC preamp without suffering hum, even slight hum, so Icon Audio keep the power supply separate. This also allows them to use a valve regulated supply because – yes – valve power supply units (PSU) sound better. The heater supply is d.c. too, to keep hum from this source out of the system.

All of which is to explain what you see in the power supply and why it is so chunky and complicated – and totally different to today's switch-mode black boxes that litter the floor.

So Icon Audio's PS3 MkII can be seen either as a valve phono stage or a whole preamplifier, albeit with no line input to accept connection of other devices. If you did want to – say – run LP alongside a source like a CD player with a volume control, or a high resolution portable player, straight into a power amplifier, then an external switching unit / passive preamp would be needed alongside the PS3 MkII. All this is becoming more likely as people seem to want to return to LP, as well as play digital files they've downloaded. The thought of combining LP with hi-res digital replay arises here – sort of bizarre – but funnily the PS3 MkII could easily be fitted with a USB 5V power outlet and analogue input to achieve precisely this. How the world of hi-fi is changing!

Anyway, such issues apart, the PS3 MkII sounds as if it might be large and imposing, but it isn't. The preamp itself measures 148mm wide, 342mm deep and 165mm high, so it occupies little space and can sit beside a turntable; weight is 4kgs. Because it possesses no hum producing power supply, it can be sited at the right hand side of a turntable, next to the pickup arm and cartridge – another benefit of a separate PSU. Or it could be sited in between two turntables, one with a moving magnet cartridge, the other with a moving coil, since both can be connected to the PS3 MkII at the same time. I can't see why you would want to do this, but it could be to spin 78s and microgrooves separately, using different cartridges. This might sound a little abstruse but I'm hearing more and more about playing 78s and LPs as historic formats, with no division between them, so if this is your interest the separate MM and MC inputs of this preamp could well be attractive.

There are two ECC88 (6922) low noise double-triode amplifying valves per channel, seen at either side of the chassis, arranged front to back and protected by metal rings. They are connected in a cascode arrangement for high gain. A central 6SN7 octal-base double triode, run as a cathode follower, acts as a low impedance output line driver.

The front carries the MC / MM rotary selector switch as well as the volume control and a red power led. There's also an important – nowadays – mono / stereo switch. At rear are phono socketed MM and MC inputs, plus phono socketed output; balanced XLRs are not fitted.

The power supply has a mains transformer and two chokes in large screening cans. It uses an EZ80 valve rectifier, then an ECC83 and 6SN7 for regulation. The PS3 MkII has d.c. heaters, and to achieve this you have to use solid-state rectification, but it is no horror story; the resultant d.c. is heavily smoothed with large electrolytic capacitors. There is no option when designing a super-quiet MC preamp because a.c. heaters always inject hum, I know

Inside the PS3 MkII preamp all parts are hard wired into place, in traditional fashion – and it sounds best. Note the use of a high quality, long-life Alps Blue volume control at bottom left in the picture.

Our rear shots shows gold plated, phono socket inputs and outputs, a ground lift switch to avoid hum, and a ground terminal. The circular canisters are screening cans around the input transformers.

from experience designing such things.

The power supply output lead is 3ft long, allowing the supply to be kept well away from preamp and turntable. However, the on/off switch is on this unit so it must be accessible. Dimensions are the same as the preamp. 148mm wide, 342mm deep and 165mm high, but weight is higher at 7kgs.

Like all Icon Audio products, both units were sturdily built and well finished. They use discrete components, so are more easily serviced than transistor designs with chips. Small-signal valves have a long life time of around 10,000 hours.

Two low noise ECC88 (6922) twin-triodes per channel provide gain, and a big 6SN7 acts as a low impedance line driver. Input transformers at right step up the MC input. MM goes in direct.

SOUND QUALITY

I used the PS3 MkII with our Timestep modified Technics SL-1210 Direct Drive turntable with external PSU, fitted with an SME309 arm and Ortolon A95 moving coil (MC) cartridge, as well as an alternative Ortolon 2M Black moving magnet (MM) cartridge. It fed both a Creek Evolution 100A amplifier and alternatively Quad II-eighty valve power amplifiers. Loudspeakers were a pair of massive Spendor SP200s, with twin 12in bass units, no less.

Firstly, hum and noise. The PS3 MkII was quiet under test, before usage, but valve MC phono stages in particular are difficult to make quiet and I had to run through hum issues before listening could begin. Turning volume on the Creek amplifier up to maximum, with PS3 volume preset to maximum, threw up a nasty buzzing hum. It was from the mains transformer of the Creek affecting the PS3 MkII input 12in away, which shows how sensitive high gain MC preamps are.

The power supply uses an EZ80 valve rectifier, OA2 voltage stabiliser and both EL84 and ECC83 as voltage regulators.

Physically re-arranging the system to keep Creek away from both the PS3 MkII preamp and the turntable eliminated all hum. At high volume, I could hear no hiss at all from the speakers with my ear close, and no hum either. The Icon Audio power supply radiated less hum than the Creek amplifier, but it has to be kept at least 1ft away from the preamp. With all units arranged not to interfere through radiating hum fields, the PS3 MkII proved silent and hum free.

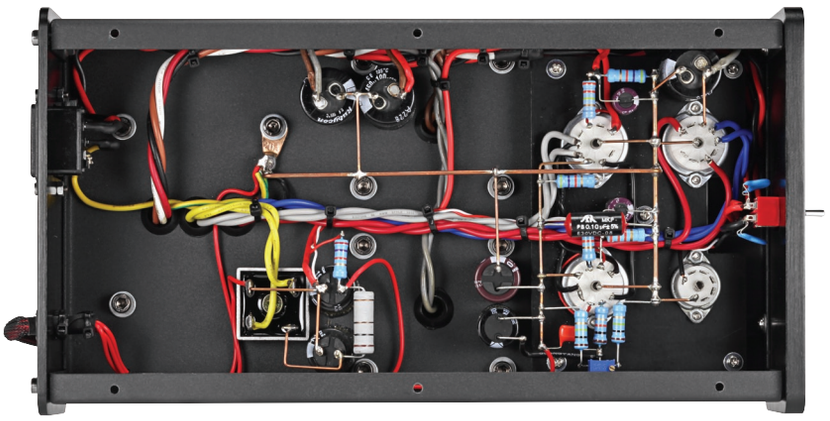
Spinning the high cut of a 12in 45rpm single, Alison Goldfrap's 'Ride a White Horse', brought out a spectrum of properties of this phono stage. Firstly think: big and dynamic. Alison Goldfrap had space around her as she sang – and there was both body to the image and space around it. The synth pulsed majestically, moving air in our listening room; bass was strong. The sound was large, fulsome and easy on the ear; the Ortofon A95 sounds fast and hard timed through solid-state phono preamps but the PS3 changed all this, making it sound easy, almost laconic. The PS3 MkII comes over as gentle yet powerful; it isn't fast and hard. In this it reflects the properties oft attributed to valves: smooth and easy.

With classical, and Marianne Thorsen playing Mozart concertos with the Trondheim Soloists, a DXD recording from 2L on 180g vinyl, her violin sounded deliciously smooth and organic against the harder faced delivery of silicon chip stages, deeper silences enhancing the sense of stage depth. There was a lovely natural flow both to Thorsen's violin and the accompanying musicians, far removed from CD and more lifelike. Whilst listening I pondered on the silence of the vinyl and the fact that CD has traditionally been rated best for classical due to absence of ticks and pops. But here LP was almost as quiet, yet more natural and engaging – easily superior to CD in my view. The PS3 MkII is certainly for lovers of classical who use LP; it adds weight and dimensionality. It also breathes life into musicians, making a performance sound less mechanical and contrived.

Moving on from DXD recordings and classical, to the other end of the spectrum, Hendrix at the Olympia Theatre, Paris, France, 1967 playing The Wind Cries Mary, Catfish Blues, live and well recorded onto analogue tape at the time, re-released in the Purple Box set by the Hendrix Estate. This all-analogue live recording fairly took over the room with its massive sense of presence, Hendrix's on-stage quips to the audience seemingly right in front of me, as if he was standing between the big Spendor SP200s. You don't get more dynamic in high fidelity than playing an analogue live recording like this and the PS3 MkII was the perfect way for me to experience Hendrix sounding clear as a bell and larger-than-life in the room, his stage amps blasting me backwards. Beyond awesome.

Although the PS3 MkII has a dark sound against chip based

phono preamps that are, by contrast flat and bright, I was still constantly surprised by the way it threw up detail like the castinets located exactly centre stage of Amy Winehouse singing Tears Dry On The Own, on a 12in 45rpm single. So the PS3 MkII produces strong treble, but not a bright sound – if you see what I mean. We get used to the sound of what we hear everyday, like box loudspeakers for example, taking it for granted. Moving to panel loudspeakers is a challenge. Similarly, moving from a conventional chip-based transistor phono stage (which most are) to a fully discrete valve stage is quite an experience – one well worth having. I use a valve phono stage at home by the way, a World Audio Design KLPP-1.



The power supply is hard wired, making maintenance simple. Electrolytic capacitors are used for smoothing, and a square low voltage, high current heater rectifier can be seen with yellow lead-outs, feeding d.c. to the heaters to eliminate all hum.

CONCLUSION

With its super-quiet transformers, few phono stages are so hiss free with moving coil cartridges as Icon Audio's PS3 MkII.

Together with high gain and very high overload figures that only valves can achieve, this phono preamp better suits low output, high-quality MC cartridges, like the Ortolon A95 I used, than most others.

The power supply rear has an IEC mains input and 3ft long power output lead, with screw lock connector. Note that the mains transformer accepts 230-240V or 110-120V mains inputs.

The presence of a volume control adds to its functionality. It can drive a power amplifier direct – nothing else is needed. So you can run an all-valve system or a hybrid system.

With fabulous sound quality it sounds big open and spacious like no other – this is a phono stage to hear. And love.

MEASURED PERFORMANCE

Frequency response of the PS3 MkII measured flat to 20kHz at full volume, and at volume settings below half. In the MkII, as in the original PS3, response changed with volume control position, so whilst RIAA equalisation was fundamentally accurate our analysis at full volume shows, at 3 o'clock on the volume control (where treble roll-off was greatest) it measured -3dB at 20kHz – enough to impose a subjectively 'warm' sound, different to that at all other volume control positions. So tonal balance is volume dependent due to simple volume control matching issues. At full volume and at half volume or less, however, the PS3 possessed an accurate balance. Icon told me they would likely reduce the pot. value from 47k to 10k to cure this.

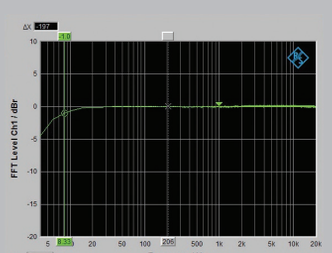
Gain values were high, x300 for MM (50dB) and x2600 for MC (68dB). But with a massive output overload value of 26V, against 10V for solid-state phono stages, the PS3 still has high input overload figures of 96mV for MM and 10mV for MC, so overload is not an issue, as it is with solid-state preamps.

Noise measured a very low 0.08μV with MC, exactly as expected due to the use of (low noise) input transformers. With MM noise was on the high side at 0.65μV, due to direct connection to a relatively noisy input valve, but this is still lower than the noise generated by an MM cartridge, so is not an issue.

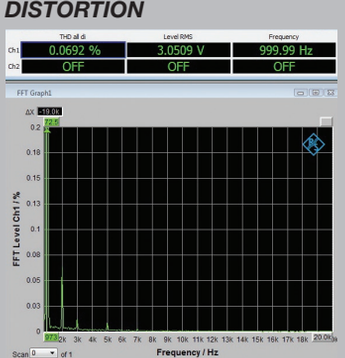
The PS3 MkII has plenty of gain and very low noise with MC cartridges, due to the use of input transformers. A small issue is treble roll off at 3 o'clock on the volume control, but other than this the unit measures very well – better than most. **NK**

Frequency response	**8Hz-20kHz**
Separation	**78dB**
Noise (MM/MC e.i.n.)	**0.65/0.08μV**
Distortion	**0.06%**
Gain (MM/MC)	**x300, x2600**
Overload (MM/MC)	**96/10mV**

FREQUENCY RESPONSE



DISTORTION



ICON AUDIO PS3 MKII £2500

OUTSTANDING - amongst the best.

VERDICT

Fabulous sound from LP and suits the highest quality low output MC cartridges. Free from DIP switches, yet immune to overload. A phono stage like no other.

FOR

- big spacious sound
- no set up
- easy to use
- volume control

AGAINST

- separate power supply
- no balanced output
- no balanced input

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