

MoFi MasterPhono

When vinyl king, MoFi, finally made the move into hardware it sought out designers of proven pedigree – the MasterPhono is scripted by none other than Peter Madnick
 Review: **Adam Smith** Lab: **Paul Miller**

MoFi Electronics has gone from strength to strength in the last few years, helped by the roster of designers drafted in to create its products. Spiral Groove's Allen Perkins worked on its UltraGold MC cartridge [*HFN* Jan '22] and MasterDeck turntable, while ex-TAD/ELAC Andrew Jones is responsible for its SourcePoint loudspeakers [*HFN* Apr & Aug '23]. Now comes the £5999 MasterPhono, a flagship phono stage from the pen of Peter Madnick, a designer best known for the iconic Audio Alchemy brand and his work as part of the Constellation Audio team [see boxout, p67].

This phono stage, the result of a two-year project, is effectively a twin-chassis product held between shared wooden sleeves that hold the power supply and amplification circuitry apart. MoFi wanted a single unit that would allow easy use in a studio environment if required, while Madnick was set on an outboard PSU, so the result is the 'best of both worlds' solution pictured here.

INNER TUBES

Look into the MasterPhono with the lid removed [see pic, right], and it's clear that it comprises two sections, separated by three copper-plated tubes. The front section (top of image) contains the unit's PSU, plus the microprocessor-based control circuitry behind the front panel, and connections between the relevant sections are carried through those copper tubes. The one on the right takes the input AC from the rear panel, the centre carries control signals between the front panel and the main circuits, and the left the DC supply from front to rear.

Meanwhile, at the back of the unit, the amplification circuitry is close to

the rear panel and sockets in order to minimise signal path length. As for the FET-based front-end, this is housed inside a further copper box for both shielding and temperature control. Finally, all amplification within the MasterPhono is discrete and RIAA equalisation is passive [see PM's Lab Report, p69].

The MasterPhono offers three inputs, selected on the front panel. Options 2 and 3 are conventional 'voltage' inputs on balanced XLRs and unbalanced RCAs, respectively. Gain options of 40, 50, 60 and 70dB and loading options of 15, 30, 50, 75, 100, 500, 1k, 10k or 47kohm are applied to both these inputs, but there is no defined 'MM' or 'MC' setting as such. There is also an 'OPT' setting on the load control that switches in a pair of rear-panel sockets to which can be fitted your own choice of loading resistor.

There's no capacitance adjustment for MM cartridges – this is fixed at 150pF – although capacitors can also be fitted to the rear-panel loading sockets if desired. Both mono operation and a subsonic filter are also available.

SETUP SAVIOUR

Settings applied to each input are 'remembered' and recalled each time that input is selected. This ease-of-use is bolstered by the inclusion of a lovely, chunky remote control handset [p69] that will operate the MasterPhono's functions from the comfort of your chair, and makes cartridge loading comparisons a doddle. All switching is via relays, so there is a slight delay when changing settings, but this also means that adjustments can be made 'on the fly' with minimal fear of thumps through the loudspeakers.



RIGHT: The two chassis enclosure, with PSU and logic [top] separated from current/voltage mode inputs, passive RIAA and balanced outputs [bottom], includes 'communication' via three copper-coloured tubes. Inputs are screened under a metal can that carries a basic schematic



Input number 1 is where things get interesting. This is a transimpedance or 'current' input, designed for cartridges with a very low, typically <math><10\text{ohm}</math>, generator impedance. Low coil-count, low-impedance cartridges will typically deliver sufficient current in response to the near-short-circuited input of the MasterPhono's I-to-V stage. The four gain settings are still available, but the load switch LEDs are extinguished when the fixed-impedance Input 1 is in use.

The front-panel VU meters, which are bathed in orange light, not only look superb but can also aid in cartridge setup – I use *The Ultimate Analog Test LP* from Analogue Productions [AAPT1]. The test mode is instigated by a long press on the MasterPhono's 'Meter' button (which is otherwise used to switch the VU meters on or off). Setup is in three distinct steps. The first allows you to choose a reference level while the second tackles cartridge azimuth adjustment while playing a track

'My room was filled with the majesty of the Albert Hall'

with its two channels out of phase – the lower the meter reading, the better. The third step uses a 10kHz test track to check upper frequency output level as a guide to optimal load setting. If you don't happen to have any test gear to hand, this can remove a lot of the guesswork!

Fit and finish of the full-width but slim MasterPhono is excellent and the wooden end cheeks are available in Walnut or Black. Two earth terminals are fitted to the rear panel – one connected to signal ground and one to chassis ground, and they therefore sit at slightly different electrical potentials. Owners can experiment to achieve the lowest hum and noise in their own systems.

OPEN WORLD

With the MasterPhono connected to my regular Yamaha C-5000 preamp [HFN Aug '20], I fed it from both a Michell Gyro SE/SME 309/Ortofon 2M Black MM into its

ABOVE: Traditional 'VU' meters can be used to optimise azimuth/channel balance and are bathed in the same warm orange glow as the LEDs that indicating loading, gain, input, etc

unbalanced phono input, and the new Musical Fidelity M8xTT [see p48], with Clearaudio MC Essence pick-up [HFN Aug '17], into its balanced XLR input. The MF deck was agnostic in terms of earthing but the Michell/SME system was quieter with the deck earthed to the chassis ground terminal and the arm to the signal ground.

With either turntable, it was apparent the MasterPhono is mostly transparent, your front-end determining the levels of detail heard. That said, a subtle frisson of midband warmth gives vocals and acoustic instruments an appealing richness. That's not to say this phono stage is all warm and fluffy, as it's not. Rather, it has an open, detailed and sweet nature that sparkles by just the right amount at the right time.

The treble is fairly even-handed, offering a pleasing crispness but with a highly alluring level of sophistication. Obviously, this depends on optimising the loading and gain for your chosen MM/MC but the remote is a boon for dialling-in the ideal settings while you stay seated. Neither does this phono stage favour MM over MC types, or vice-versa, so it will give fine results if you are running multiple decks, or arms, equipped with a range of pick-ups.

FRUIT PUNCH

The percussion effects on The Kane Gang's 'Motortown' [Miracle; Kitchenware Records KWLP7] were clean and snappy, but not lacking in body. This is an old 1980s pressing whose transient detail often sounds slightly blurred, but the MasterPhono endowed it with an almost digital sense of clarity – in a good way.

At the other end of the frequency range, the bass seemed equally crisp and focused. Whether acoustic, electric or synth-based, basslines were delivered with real confidence. The solid lows of ↻

MADNICK'S MISSION

A well-known name in the audio industry, Peter Madnick's career now spans over 40 years, beginning in retail where he started working in the stockroom of a local hi-fi store, aged 15, before 'graduating' to the sales team a year later. Following college, Madnick and two colleagues established a new hi-fi store in Massachusetts in 1977, which remains in business today.

In 1979, Madnick joined Francis G Dennesen at Dennesen Electronics, also in Massachusetts, where he developed the famous Geometric Soundtracktor cartridge alignment tool, but he was on the move again six years later to California where he worked for a period as a consultant, before co-founding Audio Alchemy in 1989. AA produced a wide range of audiophile DACs, jitter suppressors, headphone amps, preamps, power amps and phono stages, and was one of the first brands to make widespread use of the I²S digital interface.

The original incarnation of Audio Alchemy lasted until the late 1990s and, after a spell designing video projectors for Runco, Madnick was drawn back to audio as head of Constellation Audio's engineering team. Audio Alchemy rose from the ashes in 2013 before being brought by ELAC in 2016 – Madnick still designs electronics for ELAC, and consults for other brands. He joined MoFi Electronics in 2020 as senior electronics engineer, and the MasterPhono is the first fruit of this appointment.

PHONO PREAMPLIFIER



ABOVE: The MasterPhono includes traditional 'voltage' inputs and low impedance 'current' inputs for, typically, low output MCs. Both are available on RCAs and XLRs though the latter are only truly balanced with MCs. Outputs are also on RCAs/XLRs

Let's Eat Grandma's 'Sunday' [*Two Ribbons*; Transgressive Records TRANS565XD] sounded fruity and fulsome, with a well-judged balance between weight and tunefulness. The MasterPhono also teased out percussive and contrasting ambient detail from the recesses of the soundstage. It seemed to want to let me to know they existed, just in case I hadn't noticed.

BREATH TEST

It's the midband that is the real star of the show, however. The MasterPhono's lifelike revelation of textures makes it easy to concentrate on the way sounds are being formed, as well as the sounds themselves. Its perceived dynamic range is also impressive, so the intake of breath from a close-mic'd singer is as vivid as the manic pounding of a kit from an over-enthusiastic heavy metal drummer. Kasey Musgraves and her solo piano accompaniment on 'Rainbow' from the *Golden Hour* LP [MCA Records B0027921-01] was sublimely rendered, and both were locked solidly between the speakers.

Then there's the deep, wide and well-ordered soundstaging. 'Broadcasting House' from

array of speech samples the band is known for. However, towards the close when the BBC Symphony Orchestra comes in, my listening room was seemingly filled with the atmosphere and majesty of the Royal Albert Hall. Even the round of applause at the end appeared to be coming from all around the room.

Although my Clearaudio MC Essence's 11ohm source impedance is above that recommended for the phono stage's current input (a 1-2ohm low-output MC would be ideal), I was still intrigued to try it. The results were instructive, for while the sound gained extra punch and pace, and the stereo image spread even further than via the voltage input, there was still a slight loss of treble clarity and bit more stridency across the upper midband.

Clearly, the MC Essence is not ideally suited to drive this near-shortened 'current' input, but it felt as if the MasterPhono was still pulling more from the cartridge. So if you have an MC with the recommended impedance of just a few ohms, the current input would be the one to try first. For 98% of other MCs, the MasterPhono simply sings via its traditional voltage inputs! ☺



Public Service Broadcasting's *This New Noise* live LP [Test Card Recordings TCRVA05] starts gently with piano, bass and drums next to the usual

LEFT: Remote functions for phono preamps are rare, but MoFi offers armchair access for input, gain, loading, subsonic filter, mono/stereo, mute and display brightness

HI-FI NEWS VERDICT

Thanks to its various balanced/SE inputs and outputs, excellent range of adjustments and some novel new features, MoFi's smart-looking MasterPhono is a pleasure to use. More importantly it's a superlative performer, able to deliver all the detail, punch and musical emotion of your vinyl collection. The £6k demanded isn't exactly pocket change, but if you have the budget, then an audition is mandatory.

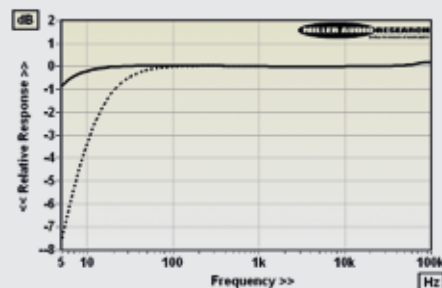
Sound Quality: 87%



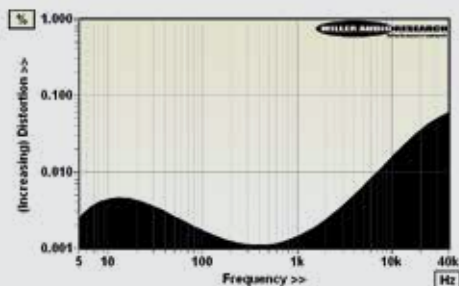
MOFI MASTERPHONO

Tested via its balanced 'voltage' inputs, and partnering balanced outputs, the MasterPhono's notional +40dB, +50dB, +60dB and +70dB gain settings are, in practice, +44.3dB, +54.2dB, +64.0dB and +73.9dB, respectively. This, and the 15ohm-47kohm input load range (custom values may also be applied) endows this phono stage with the capacity to accommodate a very wide range of pick-ups from high output MMs with a sensitivity of 6.1mV to low output MCs offering just 200µV (all 1kHz/5cm/sec). However, while the passive RIAA eq is very accurate [see below] it does soak up a lot of headroom, limiting the respective input overload margins to 66mV, 22mV, 6.8mV and 2.08mV. So while the +40dB and +60dB gain settings offer a good +22.5dB headroom with 5mV MMs/500µV MCs, respectively, the +50dB/+70dB settings are limited to just 12.5dB which is really only suitable for low output MMs and MCs.

Noise is a little lower than average, so the MasterPhono achieves an A-wtd S/N of 88.5dB with the +40/50dB settings treated as MM, and 78.2dB with the +60/70dB options as MC. Both these figures fall well inside the limit imposed by rumble/vinyl noise from the best turntable solutions as does its low distortion – an impressive 0.001-0.035% [20Hz-20kHz, re. 0dBV; Graph 2] being 500-1000x lower than that measured from the best MM/MCs reviewed in *Hi-Fi News*. MoFi specifies its balanced XLR output at 10V which is precisely met in practice (re. 1kHz/<1% THD) as is the remarkable amplitude flatness of the RIAA-corrected response – true to ±0.02dB from 20Hz-20kHz, rising imperceptibly to +0.2dB/100kHz [see Graph 1, below]. The built-in bass roll-off amounts to -3dB/3Hz, increasing to -3dB/11Hz with the subsonic filter engaged [dashed trace, Graph 1]. PM



ABOVE: RIAA-corrected frequency response from 5Hz-100kHz (subsonic filter, dashed trace; balanced i/o)



ABOVE: Distortion versus frequency re. 0dBV from 20Hz-20kHz (MM +40dB gain setting, balanced o/p)

HI-FI NEWS SPECIFICATIONS

Input loading (MM/MC)	47kohm/150pF / 15ohm-47kohm
Input sensitivity (re. 0dBV)	6.1mV/1.95mV / 635µV/201µV
Input overload (re. 1% THD)	66mV/22mV / 6.8mV/2.08mV
Max. output (re. 1% THD) / Imp.	10.1V / 54ohm (balanced)
A-wtd S/N ratio (re. 0dBV)	88.5dB / 78.2dB (MM/MC)
Freq. resp. (20Hz-20kHz/100kHz)	-0.02dB to +0.01dB / +0.17dB
Distortion (20Hz-20kHz, re. 0dBV)	0.001-0.035%
Power consumption	22W
Dimensions (WHD) / Weight	432x89x400mm / 6.8kg