

Clearaudio Absolute Phono Inside

Clearaudio puts some innovative electronic thinking into the art of the moving-coil preamplifier with the introduction of its two-box Absolute Phono Inside phono stage
 Review: **Adam Smith** Lab: **Paul Miller**

On the face of it, the phono stage is a fairly simple thing and you might think that there isn't a great deal of fiddling that one can usefully apply to such a device. After all, the RIAA curve is a given and the only things that can really be altered are gain and cartridge loading. However, German analogue maestro Clearaudio has taken a fresh look at the concept of cartridge amplification and come up with the rather remarkable pairing that are the Absolute Phono and Absolute Phono Inside moving-coil preamplifiers, both retailing for £8995.

CURRENT AMPLIFICATION

The Absolute Phono is the more unusual of the two, but it requires the use of a Clearaudio arm since the first amplification stage fits into the headshell itself [see boxout]. Under consideration here, though, is the rather more straightforward two-box Absolute Phono Inside.

Based around the same key circuitry as the Absolute Phono, this is laid out conventionally and permits the user to employ any tonearm of his or her choice. Clearaudio does stress that the somewhat awkwardly-named Absolute Phono Inside is no poor relation and that it 'almost matches the headshell-mounted Absolute Phono's 10dB improvement' in noise.

When it comes to amplification, we generally refer to the increasing of the signal's voltage, but it is *current* that Clearaudio has chosen to utilise for the first amplification section of its new phono stages. The idea of amplifying current is not a new or especially revolutionary concept – in fact, considered in their most basic terms, transistors operate by using a small input current to control a larger

output current. Furthermore, while voltage amplifiers are typically engineered with a high input and low output impedance, a current amplification circuit requires the opposite. As an MC phono input needs an equally low impedance for optimal matching with the cartridge, current amplification topology would seem to lend itself naturally to this application.

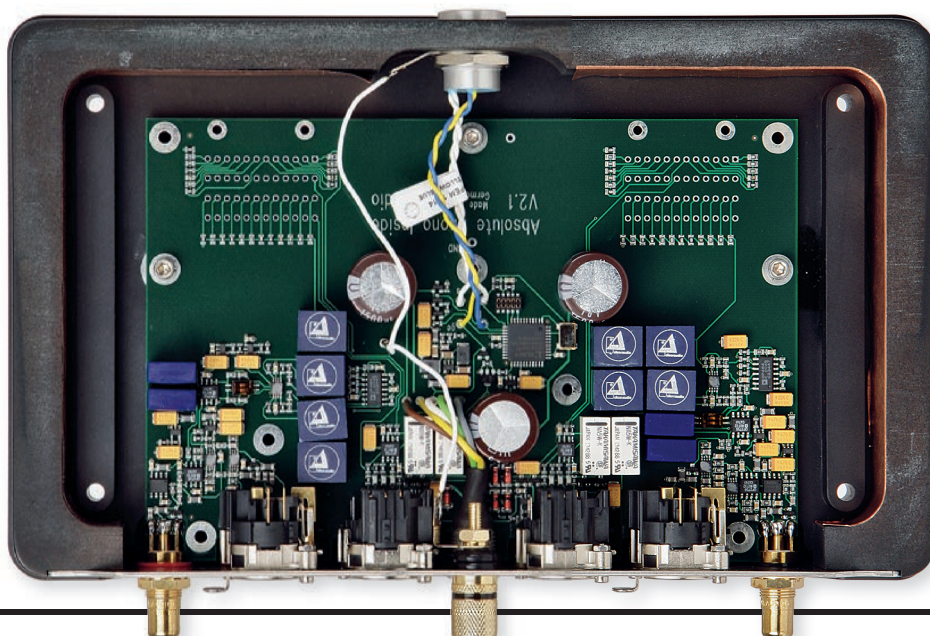
Clearaudio states that an additional advantage of this circuit type is that resistors and capacitors at certain critical stages within the signal path can be eliminated. One claimed result of this is a reduction in noise – always a useful thing when it comes to moving-coils. A further bonus with the current amplification method is that the naturally low input impedance obviates the need for precise input resistance matching.

In an ongoing effort to keep noise levels as low as possible, all subsequent circuitry after the current amp input section is configured in balanced mode. Naturally, resistors and capacitors are required in

the RIAA equalisation network but these are specially chosen precision items, and include non-magnetic Vishay Dale resistors and Clearaudio's custom-built 'Silver Glimmer' capacitors.

The Absolute Phono Inside comes in two boxes that are relatively small but surprisingly weighty – 3.2kg for the Power Supply and 3.25kg for the phono amplifier itself. While the size of the overall packaging seems initially at odds with the units' price tag, any such doubts vanish instantly on unpacking. Clearaudio has always delivered products that are a joy to behold and use and the Absolute Phono Inside upholds this tradition superbly.

Both PSU and amplifier units consist of upper and lower machined aluminium halves that sandwich a centre layer of Panzerholz wood. Black or silver finishes allow a perfect stylistic match with any of Clearaudio's turntable units. Build quality is, naturally, impeccable and a single silver touch control on the amplifier unit provides all operation. There does appear



RIGHT: Dual-mono and fully balanced, Clearaudio's current amplification is based around OP275/OP484 op-amps with quality passives for the RIAA equalisation stage



to be a second silver switch on the front of the PSU but this is merely to match the styling of the amplifier – it's nothing more than a pleasing design feature.

The amplifier's touch control is pressed once to switch the unit on, pressed again briefly to mute the output or pressed and held to switch off. A blue LED ring around this switch glows steadily to indicate the unit is on or flashes when mute is selected. Another nice touch is the provision of adjustment for the front panel illumination. I enjoy blue LEDs as much as anyone but they can tend to be too bright. The rear panel dimmer control is just another example of the thought that has gone into this beautifully made product.

Connectivity-wise, pairs of female XLR and RCA phono sockets offer balanced and unbalanced inputs, alongside a single pair of male XLR sockets for output. No

dedicated unbalanced output is offered, although this can obviously be obtained via the XLR connections with a suitable lead.

A SILENT BACKGROUND

With the Absolute Phono Inside thoroughly warmed up and connected to my Michell Gyro SE and SME 309, I began listening using the Charisma Audio MC-2 cartridge [*HFN* Feb '15] and it did not take very long to realise that the new Clearaudio really is something very special.

The first thing to strike me was the impressive silence of the unit with no record playing. Even the best MC phono stages emit some hiss as the volume is advanced but I found myself having to wind my Naim Supernait's volume control

ABOVE: Simple front panels on both units mask the technology behind. Operation is via the single switch on the [top] amplifier box

much further than usual before noise became obvious. Clearaudio's new circuit topology clearly pays dividends here.

Of course, those advantages are equally useful when music is playing, as the Absolute Phono Inside has an uncanny ability to retrieve detail – I can honestly say I have heard very few phono stages, if any, that do better in this respect. While there are many fine

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units out there that can put you right in the heart of the musical action, only the Clearaudio seems to give the impression that it has closed some 'soundproof curtains' around the recording studio, or temporarily stopped the traffic outside the live venue you are listening to. There is no unwanted distraction to accompany your listening, the Absolute Phono Inside simply draws you into the music and excludes all else, in a most captivating manner.

Across the top end and upper midrange, the Clearaudio has a purity and silkiness that is most alluring. This means that strings are vivid and gloriously lifelike but never uncomfortable or hard. Spinning the track 'Fell Down Hard' from Kathryn Williams' 2000 album *Little Black Numbers* [Snowstorm STORM008LP] was a perfect showcase for the Clearaudio's abilities. The backing cellos were gloriously textured ➔

HEADSHELL PHONO STAGE

Partner to the Absolute Phono Inside is the Absolute Phono and this differs in one crucial area. In this latter unit, the initial amplification stage is located on a tiny (9x21mm) PCB that is fitted into the arm's headshell itself. This provides an initial boost to the signal, the balanced feed rendering it less susceptible to interference and noise as it passes along to the main preamp/RIAA unit. Thanks to the presence of this PCB, eight fine solid-core silver wires are required to pass along the armtube and this limits its use to Clearaudio arms only. All current Clearaudio arms are compatible with the system and owners of older models can have their arms sent back to Clearaudio for modification on purchase of the unit. Both the main amplifier and the PSU of the Absolute Phono are subtly different from those of the Absolute Phono Inside. The preamp accepts input from the arm via a nine-way D-Type connector which also carries power to the arm-mounted PCB. This unit also adds unbalanced phono output sockets to the XLR option.

LAB REPORT

CLEARAUDIO ABSOLUTE PHONO

Bearing in mind the overall gain required to accommodate an MC headamp and RIAA network, Clearaudio has still achieved a combination of good sensitivity and exceptionally low noise in its Absolute Phono Inside. It specifies an overall gain of 60dB but my measured figure of 67.2dB (balanced in/out) is both more accurate and appropriate for an MC stage, this requiring an input of 440µV to raise 1V from the output. The unbalanced RCA input loading of 120ohm is also almost universally compatible. In practice, this sensitivity will ensure low output MCs may be used to good effect – important because while the preamp offers a mammoth maximum output of 18.1V, its input margin is slightly less generous. Inputs in excess of 8.4mV will cause it to clip, this equivalent to +25.6dB over its nominal sensitivity or +24.5dB headroom re. the IEC reference level of 500µV. Another factor in favour of lower-output MCs is the Absolute Phono's exceptionally low noise: a residual of just –88dBV (40µV) and an A-wtd S/N ratio of 94.5dB (re. 500µV) – this is the sort of figure typically associated with the very best MM stages and sets a new state-of-the-art for MC performance.

Distortion falls with increasing frequency, the 'maximum' of 0.018% at 20Hz reaching 0.0017% at 1kHz and a minimum of just 0.0005% at 20kHz at 1V output [see Graph 2, below]. No MC pick-up will match this, so the stage is essentially 'transparent' from the perspective of THD. Its equalised response is just a little adrift from Clearaudio's ±0.5dB specification, its generalised bass uplift of +0.9dB married to a gentle treble roll-off of –0.75dB/20kHz [see Graph 1, below]. Readers may view a QC Suite test report for Clearaudio's Absolute Phono Inside MC preamp by navigating to www.hifinews.co.uk and clicking on the red 'Download' button. PM



ABOVE: Both balanced and single ended inputs are provided but only balanced outputs are offered. The rotary control on the PSU rear adjusts front LED brightness

and the acoustic guitar more clearly defined than I have ever heard it before. Equally, in imaging terms, the Absolute Phono Inside again played a master card, by locking Ms Williams right at the centre of the performance, guitars just to the right and cellos behind. The track was built solidly on the foundations provided by the double-bass and percussion, and apart from this there was glorious silence... no vinyl roar, no hiss, hum or interference.

DIGGING OUT THE DETAIL

At the lower end of the spectrum, the Clearaudio served up a bass performance that was beyond reproach. It dug deep and pulled magnificent levels of detail from within recordings but avoided the trap of ever becoming either over-zealous or wallowy.

If the track you are playing has a good bass line then the Absolute Phono Inside draws it effortlessly from the mix and pounds it out with gusto and precision. However, if the low end is somewhat curtailed, then it gently lets you know, but at the same time making sure that the music, as a whole, never suffers.

With Jessie Ware's 'If You're Never' from her *Devotion* LP [Cherry Tree B0018230-01], the Clearaudio aptly proved my point by setting up a gloriously strong and tight synthesiser bass line. Simultaneously, though, Jessie's vocals were beautifully articulated and almost intimate – completely at odds with the pace of the track in some ways. However I realised quickly that the Clearaudio phono stage was simply pulling out every single aspect with surgical precision, yet without sounding sterile or mechanical.

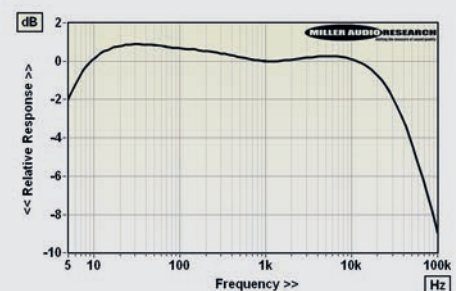
Even poorer recordings failed to cause the Absolute Phono Inside to break into a sweat. Todd Rundgren's 1978 album *Hermit Of Mink Hollow* [Bearsville BRK6981] is a superb example of an ambitious (perhaps over-ambitious) multi-layered recording and while it's an absolute musical delight, in sonic terms it's perhaps more than a little untidy. So while the Clearaudio made it obvious that this was no audiophile delight, it still managed to dig out little inflections and subtleties buried deep within the mix that I had not heard before.

Poor recordings *can* make a good test of the equipment. As the system becomes more revealing, such pressings can often sound worse, but continue on up the upgrade path and suddenly they become listenable again. Truly capable equipment allows you to listen through recording defects, and the Clearaudio manages it better than nearly all other phono stages I have so far heard, at a price. ☺

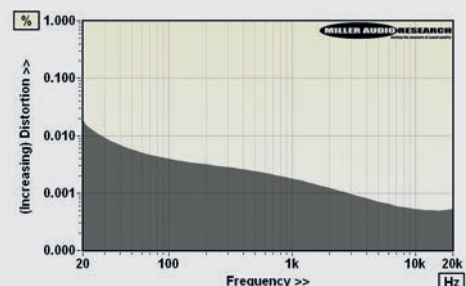
HI-FI NEWS VERDICT

The Clearaudio Absolute Phono Inside is arguably a landmark MC phono stage design, albeit a costly one. Ostensibly simple on the outside, the two-box solution is intelligently conceived and expertly executed. The result is a truly captivating sound quality that is difficult to criticise on any level. That the Absolute Phono version could be even better holds a tantalising prospect for all owners of Clearaudio tonearms.

Sound Quality: 88%



ABOVE: RIAA-corrected frequency response from 5Hz-100kHz (within ±0.9dB from 20Hz-20kHz)



ABOVE: Distortion versus frequency from 20Hz-20kHz at 1V output. Typically <0.01% through audio range

HI-FI NEWS SPECIFICATIONS

Input loading (MC)	120ohm (unbalanced)
Input sensitivity (re. 0dBV)	439µV
Input overload (re. 1% THD)	8.4mV
Max. output (re. 1% THD) / Impedance	18.1V / 31ohm
A-wtd S/N ratio (re. 0dBV)	94.5dB
Frequency response (20Hz-20kHz)	+0.90dB to –0.75dB
Distortion (20Hz-20kHz, re. 0dBV)	0.0185–0.0005%
Power consumption	6W
Dimensions (WHD)	240x56x145mm (each unit)