



Allnic Audio H-1201

PHONO EQ AMPLIFIER

Many audio reviewers would have you believe that high-end components designed and built by a single person are often distinctively individual... sometimes, even, verging on 'quirky'.

And it's products such as the Allnic Audio H-1201 Phono EQ Amplifier, designed by Kang Su Park, that prove there's more than a grain of truth in that theory.

THE EQUIPMENT

Before getting onto the 'distinctively individual' elements of the H-1201's design, let's get the nuts and bolts out of the way. And they are 'nuts and bolts', because there are certainly no 'bells and whistles' on this Spartan phono stage. As a phono stage, it has inputs for both moving-coil and moving-magnet cartridges. The voltage gain of the MM section is fixed, at 38dB, as is the impedance (47k Ω).

The voltage gain of the MC section is variable, as it's able to be switched between an indicated 22dB, 26dB, 28dB and 32dB. However, because the MC section includes a fixed gain stage with a voltage gain of 40dB, the actual gains are 62dB, 66dB, 68dB and 72dB. When you switch gain on the MC section, you also necessarily switch input impedances, which Allnic confusingly labels as $\times 13$, $\times 20$, $\times 26$ and $\times 40$, stating only that the highest input impedance the MC section offers is 280 Ω . In fact, according to Kang Su Park, the corresponding impedances are 29 Ω , 69 Ω , 117 Ω and 278 Ω . In each case these are suitable for cartridges 'up to 29 Ω ', 'up to 69 Ω ', 'up to 117 Ω ' and 'up to 278 Ω '.

The construction of the transformers (which are made in-house at Allnic's facility in Korea) is what gives rise to the company's name, because they use cores made from Permalloy, which is a Nickel-Iron compound

developed by Gustav Elmen (*Ref 1*) when he was working at Bell Laboratories, and Allnic says that the word 'Allnic' is a contraction of the words 'All Nickel Core'. This confused me because Permalloy not pure Nickel at all, but a mix of Nickel and Iron. Notwithstanding, Park is apparently a great admirer of Elmen's work; he even includes a dedication in the Owners' Manual for the H-1201 that says: '*Allnic is grateful to Mr G.W. Elmen of Western Electric for inventing Permalloy for transformer core use, and in so doing, providing an enormous service to recorded music listeners everywhere.*' Permalloy is most useful because of its extremely high permeability, but its other highly desirable magnetic characteristics, including low coercivity, almost no magnetostriction—and its significant anisotropic magnetoresistance—made it the ideal material to use in tape recorders, which is presumably the application for which Allnic is lauding Elmen.

■ Anyone 'experienced in the art' of valve design will have done a double-take when they heard that Allnic uses E180CC valves, because they were designed for use in computer circuits...

However as a tape recorder head material, Permalloy had several drawbacks, the main one of which was its relative softness, so it was eventually superseded by ferrites. (This obviously isn't an impediment when Permalloy is used in a transformer, as it is in the Allnic H-1201.)

As you can see from the photographs accompanying this review, the gains are set individually for each channel, as you're actually changing taps on the transformers themselves (one for each channel), and these transformers are located at the back of the unit, behind the four E180CC NOS twin triodes (Mullards, made in Holland, were the ones fitted to my review sample). Rather than use E180CCs, you can also use 12AV7s, 7062s, or 5965s, but Allnic's *Owners Manual* warns that while these 'equivalent' valves are: 'approximately electrically equivalent' they are not, says Allnic, 'sonically equivalent.'

Anyone 'experienced in the art' of valve design will have done a double-take when they read above that Allnic is using E180CCs, because these valves were not designed for audio use. To quote the descriptor for this valve on the 'The National Valve Museum' site [www.r-type.org] "*The E180CC is a special quality double triode designed for use in computer circuits. The E180CC will maintain its emission characteristics after long periods where the valve is biased to cut-off. This characteristic equates to use in a bi-stable or flip-flop circuit. The E180CC is not designed for audio use.*" This apparently didn't deter Park from experimenting with the E180CC valve, with the happy result that he's now a convert. He reportedly told reviewer David McCallum (*Enjoy The Music*) not only that the E180CC is 'a very good tube' but also that he: 'loves this tube.' (Ref 2.)

The fact that Park loves the E180CC puts him in very good company, because according to none other than English electronics designer Phil Taylor of Effectrode [www.effectrode.com], the E180CC is a great-sounding valve. He says of it: '*Audiophiles have been seeking it out since the price is generally lower than the premium ECC81 NOS prices currently. Like the 5965, it has slightly lower gain than the 12AT7, and has the added advantage of a 10,000-hour heater life to make it another audiophile "secret" tube. A super bargain when you find them, since they are musical and smooth to listen to, and actually sound better than many*

standard 12AT7 tubes. This tube is about a half-inch taller than the standard 12AT7, so chassis space is an important consideration.'

Allnic says the H-1201 is a pure Class-A design that does not employ any negative feedback, and that the RIAA equalisation is done passively, using discrete capacitors and resistors to an overall accuracy of $\pm 0.3\text{dB}$. Distortion is specified at 'less than 0.3% at 1kHz' and signal-to-noise ratio is specified at '68dB at 1kHz (CCIR).'

The front panel of the H-1201 has a push-button for mains power (with a status LED above), a push-button for muting (again with a status LED above it) plus a large rotary switch for selecting either the MM or MC input. I don't know if it's just me, but I couldn't understand what the graphic on the mute button meant. Obviously I knew that one position muted the output and the other unmuted it, but I could not tell just from looking at the graphic which position was which, nor could I work it out from the chameleon tell-tale LED above it. (For the record, 'out' is muted, and the manual has this information in it.)

The rear panel has gold-plated RCA connectors for the MM and MC inputs, along with nickel-plated earth terminals, plus a single pair of gold-plated RCA connectors for outputs (which have an impedance of 1.2k Ω , according to Allnic). The Allnic Audio H-1201 measures 310x230x140mm (WDH) and weighs 13.2kg.

Now, let's look at those 'distinctively individual elements' of the design I mentioned earlier. First, the H-1201 has no overarching external chassis, so what you see is most definitely 'what you get' with this design, which means the four valves are somewhat exposed. It's true that the valves are afforded a very high level of protection by virtue of being enclosed in clear tubing, the tops of which are covered by circular perforated steel casings to allow heat to escape, but it's not the same level of protection that would have been given by a fully-enclosed chassis.

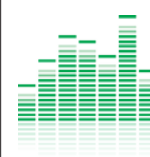
A second 'distinctive element' is that the valve shields are actually higher than the front panel, so they protrude above it. This means that if anyone places anything on top of the H-1201, it will rest directly (and only) on these shields,

rather than the front panel. If the front panel had been just 13mm higher, it would have at least been as tall as the valve tubes.

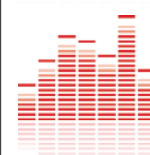
A third 'distinctive element' is actually two distinctive elements, by which I mean the two sculpted carrying handles—which to me looked rather like knuckle-dusters—that are located either side of the 'deck' that supports the valves and transformers. Although I found the design of these handles rather unusual, I cannot deny that they 'felt' great when I was using them to carry the H-1201 around, and they also allowed me to move the H-1201 with supreme confidence that I'd never lose my grip. They're also beautifully balanced. So practically—and ergonomically—speaking, the handles are a runaway success.

ALLNIC AUDIO H-1201 PHONO EQ AMPLIFIER

Brand: Allnic Audio
Model: H-1201
Category: MM/MC Phono Amp
RRP: \$3,725
Warranty: Two Years
Distributor: Audio Heaven Pty Ltd
Address: Keys Road, Keysborough VIC 3173
(04) 1855 2051
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- Individual design
- Superb sound
- Great value



- Limited MC matching
- Exposed wires behind MM/MC switch

LAB REPORT

Readers interested in a full technical appraisal of the performance of the Allnic Audio H-1201 Phono Stage should continue on and read the LABORATORY REPORT published on page 114. Readers should note that the results mentioned in the report, tabulated in performance charts and/or displayed using graphs and/or photographs should be construed as applying only to the specific sample tested.




Lab Report on page 114



■ **You will be so thrilled by the incredible purity of the sound you're hearing, to the extent that it will likely be as if you're hearing the music for the first time**

you will be so thrilled by the incredible purity of the sound you're hearing, to the extent that it will likely be as if you're hearing the music for the first time. The H-1201 retained everything I love about vinyl: the incredible realism of the stereo staging, the precision of the treble, and the organic, rich sound of the bass, but at the same time delivered an even more sweet-sounding midrange than I've heard before, plus an over-arching 'richness' in the sonic tapestry that I can't find words to describe, other than to say I was enchanted. And perhaps that's the reason: the Allnic Audio H-1201 had (like Carlos Santana's *Black Magic Woman*) cast a spell over me. (And for all the pedants out there who will otherwise send complaining emails to the editor, yes, I know that Santana did not write *Black Magic Woman*, and that it was Peter Green, of Fleetwood Mac. But it was Santana's version on the album *Abraxas*—which I used when auditioning the H-1201—that made the song famous. And for the ultimate pedants, the song owes much to another tune—*Gypsy Queen*—composed by Hungarian jazz guitarist Gábor Szabó, which in early versions was played as an instrumental at the end, and in others also used as an introduction, but in yet others omitted entirely. A band I was playing in at the time played all the versions of this song, depending on how much time we had to fill when we'd almost exhausted our repertoire!)

CONCLUSION

Yes, the Allnic Audio H-1201 is 'distinctively individual'—and yes, some may even say it's verging on 'quirky'—and you're certainly paying for the fact it's all made almost entirely by hand, and that each one is individually tested and inspected by the designer himself. But the sound... ah, the sound... it's truly magic!  **George Engler**

References: (1) <http://tinyurl.com/permalloy-ellen>
(2) <http://tinyurl.com/ksparquote>

Visually, I'm still not quite sure...

The other distinctive element is that the wiring behind the MM/MM switch is not hidden or protected in any way. Damage is unlikely, but it looks untidy... or quirky and individual, take your pick!

IN USE AND LISTENING SESSIONS

I used the Allnic Audio H-1201 with both moving-magnet and moving-coil cartridges. When used with moving-coil cartridges, despite finding settings that suited all the different MC cartridges I used, I did make note of the fact there are only four different settings from which to choose. It's true that the H-1201 is Allnic's entry-level phono stage,

but I have reviewed similarly-priced phono stages from other manufacturers that have offered more than thirty different impedance settings, along with more than half-a-dozen different capacitance settings, plus additional options for gain. The difference is that all the manufacturers offering this flexibility were using active circuitry—often solid-state—with all the issues and problems these approaches bring to audio, whereas Allnic Audio uses primarily passive circuitry—and valves!—which makes such options impractical.

But when you hear the sound of your favourite LPs, as reproduced by your favourite phono cartridge operating through the Allnic H-1201, you will instantly forget all about resistance and capacitance matching, because

ALLNIC AUDIO

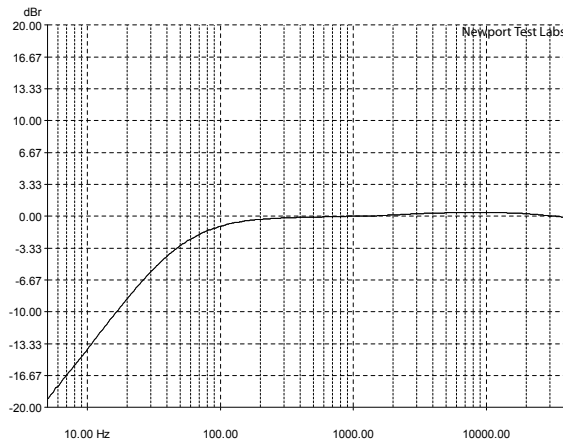
Allnic Audio was established in 1997 in South Korea, by Kang Su Park. Park had previously (March 1990) established Silwaweld Audio Design, which merged with another Korean company (Hanil, owned by Han Jin Cho) in 1993. Park (who had been the chief designer) then sold his interest in the company in order to found Allnic Audio Labs. From all accounts, K.S. Park has decided to keep all Allnic Audio's production not only 'in-house' but also 'in the family' so to speak, because it appears that all Allnic Audio's products are individually hand-made in South Korea only by people who are immediate and extended members of Park's own family, which includes his wife (who works as the company's accountant) and his son (who works as an assistant engineer). The company even winds its own transformers... by hand. In addition, Park personally inspects and signs off on every Allnic product before it leaves the factory. (His are the distinctive spidery initials you'll see alongside the 'Final Inspection' section on the quality control certificate that is supplied with every Allnic product.) Allnic's global distribution is handled by David Beetles, of Hammertone Audio in Canada, who is also responsible for producing the English-language versions of Allnic Audio's *Owners Manuals*. Here in Australia, Allnic Audio distribution is handled by Craig and Annabelle Johnstone, of Audio Heaven. 

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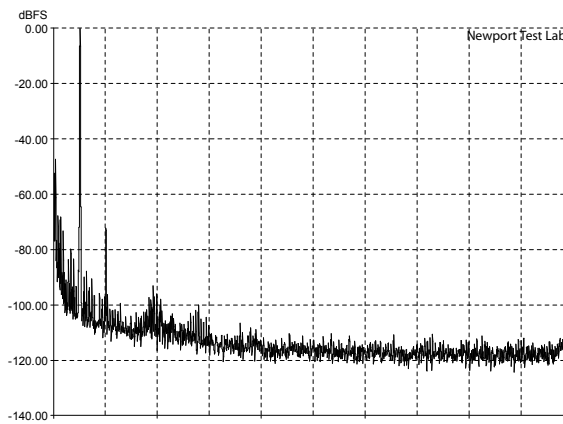
LABORATORY TEST RESULTS

The frequency response of the Allnic H-1201 Phono EQ Amplifier is shown in Graph 1. Note that *Newport Test Labs* has used an inverse RIAA network to compensate for the Allnic's own internal RIAA curve. As you can see, the response is incredibly flat above 400Hz, extending up beyond 30kHz within ± 0.05 dB. The response rolls off very slowly below 400Hz, to be 3dB down at 50Hz and 6dB down at 30Hz, which puts the overall response at 30Hz to 30kHz ± 3 dB. This falls somewhat short of the 20Hz to 20kHz ± 0.3 dB specification, but since the roll-off really affects only the deepest bass, this will have the beneficial effect of ensuring that inevitable unwanted low-frequency sounds of a turntable (motor and bearing rumble) will be attenuated. Also, contrary to popular belief, very few LPs—even so-called 'audiophile' ones—contain any musical information below 30Hz.

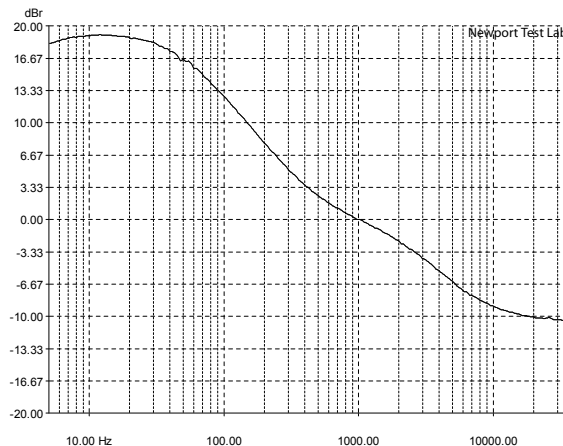
Channel separation was excellent, being measured by *Newport Test Labs* at 95dB at 1kHz, and channel balance was equally outstanding, with only a 0.047dB difference between the left and right channels at 1kHz. At this same test frequency, inter-channel phase was an exceptionally good 0.1° . The marked gain settings on the transformers varied from being a perfect match with the calibrated settings (at 32dB, the gain was exactly 32dB), to being very slightly different (29dB for the 28dB setting, 25.6dB for the 26dB setting and 21dB for the 22dB setting). More importantly, the gain matching between the channels for each of these setting was outstanding: always within measurement error of the 0.047dB that's shown in the tabulated chart below.



Graph 1. Frequency response using inverse RIAA filter. [Allnic H-1201 Phono EQ Amplifier]



Graph 2. Total Harmonic Distortion (THD) at 1kHz. [Allnic H-1201 Phono EQ Amplifier]




Graph 3. Freq. response showing RIAA Equalisation curve. [Allnic H-1201 Phono EQ Amp]

The Allnic H-1201 Phono EQ Amp performed superbly on Newport Test Labs' test bench

Signal-to-noise ratio was measured at 43dB unweighted, which increased to 68dB with 'A'-weighting, which is a perfect numerical match with Allnic's own specification of 68dB, even though the company uses CCIR weighting, rather than 'A' weighting. This excellent figure will ensure the noise floor of the H-1201 is well below that of any vinyl it will be used to reproduce.

Harmonic distortion is shown in Graph 2, for a 1kHz test signal. You can see that the only significant harmonic distortion component is the second harmonic, which is 'way down at -73dB (0.022% THD). That it's only second harmonic is also significant because the second is a 'good-sounding' harmonic because it's perceived by the human ear not as 'distortion' but as added 'richness', since musically-speaking, the second harmonic is the octave above the fundamental. You can also see from this graph that over almost all the audio band the noise floor is more than 100dB down: it's only at very low frequencies that the noise floor rises to get closer to the signal. Overall THD, which Allnic specifies as being 'less than 0.3%' was measured by *Newport Test Labs* at 0.9%, a difference so small it could be the result of minor differences in measuring techniques and/or the input/output levels used for reference.

Power consumption is very low, despite the use of valves and the lack of a stand-by mode, so the Allnic H-1201 consumes only a little more than 30-watts when operating. It also runs relatively cool.

Overall, the Allnic Audio H-1201 Phono EQ Amplifier performed superbly on *Newport Test Labs'* test bench, meeting or exceeding its manufacturer's specifications in nearly all measurements.  **Steve Holding**

REFERENCES: <http://www3.alcatel-lucent.com/bstj/vol102-1923/articles/bstj2-3-101.pdf>

Allnic H-1201 Phono EQ Amplifier – Laboratory Test Results

Test	Measured Result	Units/Comment
Frequency Response @ 5mV o/p	See Graph	-1dB
Channel Separation (dB)	95dB	@ 1kHz
Channel Balance	0.047	dB @ 1kHz
Interchannel Phase	0.01	degrees (1kHz)
THD+N	0.09%	@ 5mV output
Signal-to-Noise (unwghted/wghted)	43dB / 68dB	dB referred to 5mV output
Muting Function	26dB	
Power Consumption	N/A / 31.89	watts (Standby / On)
Mains Voltage Variation during Test	238 – 256	Minimum – Maximum