



# Pulse quality

**Avid's Pulsare phono stage has spawned a sequel. Paul Rigby reviews the company's latest Pulsare II all-balanced phono stage.**

**T**he Pulsare phono stage was Avid HIFI's first official foray into electronics, supporting its turntables, although the company had been making 'electronics' all along via its turntable power supplies, but still...

There was another very good reason as MD, Conrad Mas, explained, "We noticed that there was a real shift in how (phono stage) electronics were made. They seemed to curtail or alter the frequency spectrum, highlighting the upper frequencies and giving a false impression of how much detail there was in the sound. That is, cutting away the bass to make it sound more top end." Avid

tried to redress that balance to provide a more even sound spectrum with more lower frequency meat on the bone.

That was the philosophy of the Pulsare II phono amp. That meant avoiding valves, though, "Valves are romantic", said Mas, "but it's impossible to have valve equipment that are the ultimate in state of the art. You are limited in terms of noise and they are susceptible to mechanical disturbance too. There are too many limitations with valves".

The Pulsare is a fully balanced design, to reject noise and outside interference. To that extent the power supply was placed within a

screened separate box. More than that, unlike its competitors, Avid refused to feature digital components which also harbour noise. "Our audio signal doesn't go through any solid-state switches, they're all operated via relays. Our number one element is signal integrity. There's no outside interference to distort the signal." There's also no DIP switches for the same reason.

Spanning 290x240x100mm and weighing in at 3.8kg for the control unit and 6.4kg for the PSU the control unit features a series of inputs for balanced, RCA and RCA (balanced). "The latter is useful for pick-up arms which are subject to

hum: some Rega arms are earthed through the cable screen which can produce earthing problems, for example".

You can also utilise the phono amp with a two-armed turntable or, in fact, two turntables, flicking between the pair. "Ideally, we recommend XLR only so that the cartridge is run fully balanced", said Mas. "The cartridge itself is a fully balanced device. As such, the arm cable offers much less chance of noise or hum. This phono stage is also fully balanced inside, also rejecting alien noise coming into the circuit.

When faced with RCA, the system allows noise to come in through the earth. RCAs link the earth and the signal together. For balanced cables that changes, the earth is separate. We have a balanced option on the Pulsare II because there is a need for it. There wouldn't be on a power amp, for example.

The reason? A cartridge handles micro volts. For such a small amount of power, there is a greater chance of that tiny voltage being corrupted by noise. On the other hand, a power amp, for example, offers a great deal of power, so it tends to drown out the noise".

The gain selector includes MC (High) of 70-72dB which is around 10dB more than a conventional phono amp. "We like to take the signal from the turntable and elevate it as high as possible instead of allowing the pre- and power amps only to increase the level, we want to do that from the off. The pre-amp will not have much gain to include. When you have a high input signal, its less prone to be influenced by outside distortion," said Mas.

The resistance values selector offers a load to the cartridges. You can tune it to what you want. But, "most people forget that a cartridge might recommend 500 Ohms, say, but it might be worth clicking down to 300. The arm and cartridge leads will also have resistance values. By the time you've added that in, that might up the value to 500 Ohms anyway. It's worth having our facility to tweak it. You won't harm anything by trying the other values".

The capacitance option is mainly for MM cartridges but exotic MC models might benefit from the included high capacitance levels. A mono switch has also been added along with a new subsonic filter. "For those who do not have a decent turntable or have the wrong cartridge in the wrong arm. It's there to reduce cone flap". Inside is a further option to add your own

resistor value for quirky cartridges.

The power supply features a large transformer, a toroidal of 300VA, double regulated to provide a pure and stable source of power. On the rear of the power supply, you can have the earth floating or grounded to zero volts. You can flick it if you have a hum problem in your system. Other differences include new capacitors within both boxes that promises to elevate the sound.

But are those promises fulfilled?

elements on the track that also reach into the treble region. More detail was noticeable via the Avid which sounded like it had de-cluttered the upper frequency region, allowing the turntable to properly present the music on offer.

The eradication of these distortions pulled me deeper into the mix, opening up many new midrange and treble elements previously masked by noise. The accompanying strings were a prime example of that.

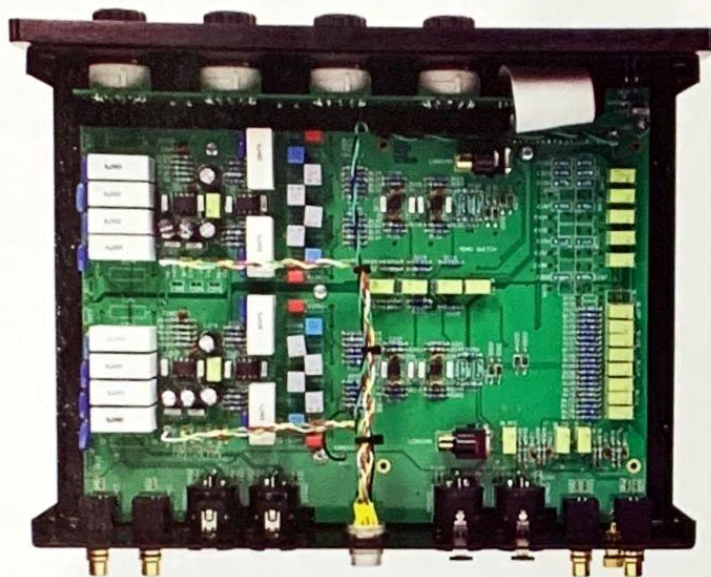
"it remains true to the primary source, ridding the signal of noise and maintaining a colour-free presentation with great focus"

### SOUND QUALITY

From the first few seconds of playing Kansas' 'On The Other Side' from the album, 'Monolith', the sonic highlights of the Pulsare II could be discerned immediately. The lead vocal on this LP can run the risk of a touch of midrange bloom, giving the impression of uncontrollable crescendos. The Avid removed the

On my reference system, the strings sounded smooth and engaging but the Pulsare II added a richer and more emotional rendition.

As for the soundstage? That was 3D, in effect, with added layers providing complexity and oodles of air – the wood block percussion offered long reverb tails, for example. Finally, bass was bold, yes, but also



bloom and added, instead, focus which immediately made his voice an expressive instrument, capable of nuance and texture.

The track can, with the wrong set-up, be subject to some upper midrange lift too as this LP has been mastered with a touch of compression. The Avid eases the compressive traits, revealing a more considered presentation. Continuing the high frequency performance, there are a host of percussive

deep and tight with a huge degree of body and a confident sense of control over the entire low frequency spectrum.

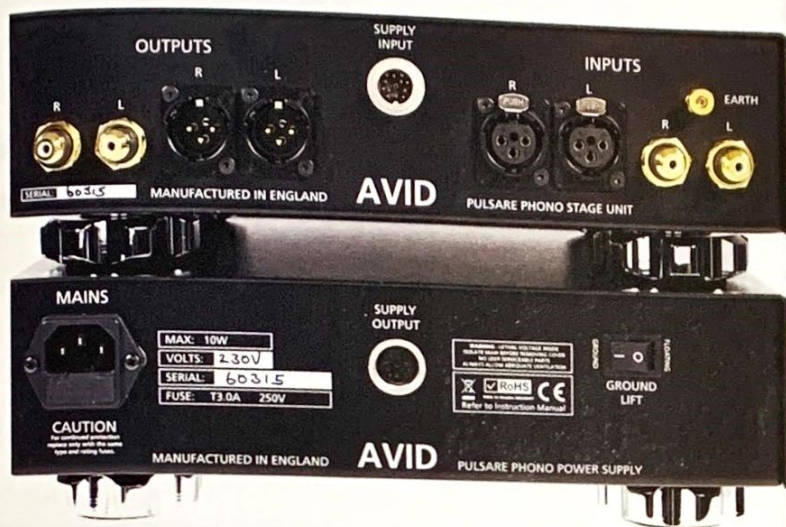
Taking a jazz path and June Christy's rendition of 'Give A Little Whistle'. What was surprising here was how much bass appeared in the mix of this midrange-centric track, offering a wholesome balance to the mix as well as great drive to the performance. This underpinned the track, giving it sense as a song,

providing plenty of information to the ear.

It was easy for the strong Christy vocal to be affected by bloom, such was her authority. The Avid avoided this likelihood, producing a focused vocal delivery. Broad clarity ensured rim shots were sharp, and brimming with impact.

With piano the Pulsare II gave a

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*The balanced connections on the Avid are the principle tools to remove noise distortion from the analogue signal.*

attractive sheen, their treble quality was light and they could be discerned throughout the length of the track.

## CONCLUSION

The Avid Pulsare II is the best phono amp that I have ever heard. It's concentration on removing distortion from the hi-fi chain is the primary source of my enthusiasm. As such, it remains true to the primary source, ridding the signal of noise and maintaining a colour-free presentation with great focus.

## REFERENCE SYSTEM

Avid Acutus turntable  
SME IV tonearm  
Benz Glider cartridge  
Icon PS3 Phono Amp  
Aesthetix Calypso Preamp  
Icon MB845 Monoblocks  
Quad ESL-57 One Thing Speakers

complex rendition, producing a busy and involving performance whose complex key work was remarkable for its distinct nature.

Spinning the original mono cut of Mel Torme's 'Sunday In New York' from the album of the same name on Atlantic, the bass was, again, prominent. The first several seconds are dominated by a bass sax accompanying Mel Torme's vocal. The instrument, via the Avid, had a deep, rounded sound that was both vibrant and satisfyingly modulated. Torme's vocal delivery was calm and focused. The supreme male vocal jazz singer, he can produce a complex, difficult-to-follow delivery but the Avid managed it easily.

The mono soundstage had obvious boundaries but the performance was complex. Apart from Torme, a backing orchestra and skilled soloists are present. The Avid succeeded in resolving every instrument, tracking them without effort – quite a feat within the restricted mono soundstage. A highlight was the brass section that possessed a sparkling sheen and purity. Cymbals, also had an

## MEASURED PERFORMANCE

Our analysis shows the Avid Pulsare 2 phono stage had almost ruler flat frequency response, meaning its equalisation perfectly followed RIAA 3180/318/75 $\mu$ S time constants. Avid claim to have compensated for the 3.14 $\mu$ S roll off above 50kHz used to prevent Neumann cutting lathe heads burning out due to excess high frequency energy whilst recording, and this explains the small compensatory replay lift seen above 10kHz. It is small enough to be inaudible in practice.

The warp filter rolls off gain below 40Hz, introducing -8dB of attenuation at 5Hz, where warps are most common.

Gain with Moving Magnet measured a normal x100 (40dB) and with Moving Coil x300 (50dB), x1000 (60dB) and x3000 (70dB), more than enough to cover all eventualities, right down to lowest output MC cartridges. Gain was identical when using XLR inputs or outputs.

Noise levels were low at around 0.1 $\mu$ V equivalent input noise with MC and 0.6 $\mu$ V with MM. In practice MM self generated thermal noise swamps input noise I should point out. Noise from the preamp will be inaudible with both MM and MC.

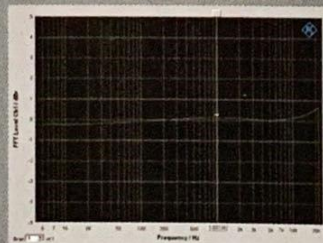
Output swing was 10V from the phono outputs and 20V from the XLR output, meaning the Pulsare has plenty of overload headroom.

The Pulsare 2 produces a text book

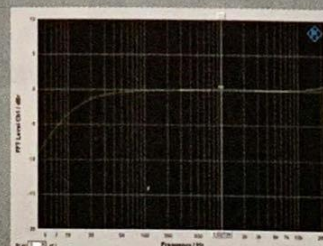
performance under measurement. It has no unusual features or weaknesses, has masses of gain, low noise and is very adjustable. NK

Frequency response	20Hz-20kHz
Separation	101dB
Noise	dB
Distortion	0.001%
Gain MM	x100
Gain MC	x300/1000/3000
Overload	10V out (20V XLR)

## FREQUENCY RESPONSE



## WARP FILTER RESPONSE



## VERDICT

Top notch sound, great build quality and excellent value for money, the Avid Pulsare II is a leader in its class.

**AVID PULSARE II £4,300**

Avid Hi-Fi

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[www.avidhifi.co.uk](http://www.avidhifi.co.uk)

## FOR

- bass performance
- clarity
- dynamics
- distortion free

## AGAINST

- nothing