



## Quiescent T500VA

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How do you like your mains: au-naturel, actively re-generated or passively treated? It's a question I'd first considered some 16 years ago when I attended a listening session with a group of some half a dozen audiophiles. We had gathered to audition and compare assorted components that each of us had brought along. Among the visiting DACs, phono stages and step-up transformers was a mains regenerator, the very make and model that at the time was garnering much praise on audio forums. Its owner lived on the outskirts of one of England's major cities and he told us that at home he heard a quieter background and less distortion. In the host system that day, located in a fairly remote country house, we critical listeners heard no upside from the regenerator, only the downside of a reduction in dynamic expression that robbed recordings of some of their ability to engage listeners emotionally.

The experience suggested an important principle; that **just because the mains supply in one setting is polluted** with noise from PCs, microwave ovens, broadband routers, televisions and so forth, the same resulting drag on audio system performance will not be present everywhere, either to the same extent, or even at all.

Alongside this consideration there was also an obvious accompanying question: was the reduction in dynamic expression that we all heard a generic downside of all regenerators, or just the unit then being evaluated? Over the next few years I tried mains regenerators of several sizes and makes in my own system but the judgement was always a negative one to a greater or lesser degree; the sometimes heard reduction in distortion never being sufficient to offset an attendant loss of dynamic expression.

That changed when I tried passive mains treatment for the first time, a Taga HiRez mains block by the then snappily-named company Vertex AQ. The Taga used passive techniques to mitigate mains-born EMI, RFI and microphony, and for the first time I heard less unwanted noise and no reduction in dynamic expression. In fact, dynamic weight and detail seemed to be enhanced as music bloomed from a quieter background.

Vertex AQ's insight – which was unique at the time it as far as I am aware – was that as well as mains quality, attention needs to be paid to the harm that systems cause to themselves. Capacitors and other discrete electronic components are sources of microphony, EMI and RFI, and speakers cables act as antennas, picking up radiated pollution and transferring it back into the system. It is a combination of mains-born and systemic corruption that causes the

intermodulation and other unwelcome noise that masks detail and robs music of dynamic energy.

### Four in one

Fast forward to today and the company, now renamed Quiescent, has continued its quest to advance the state of the art in passive reduction of EMI, RFI and microphony, developing technologies, one recently patented, underpinning a whole new range of passive treatment products. These include Peak Mains Modules, devices that remove EMI, RFI and microphony before it can enter individual components via the mains supply, Peak Speaker Modules that are inserted in the signal path between power amplifier and speaker to trap EMI, RFI and microphony, and Peak Grounding Modules, devices that drain EMI and RFI from audio components via their unused interconnect sockets or grounding pillars.

The T500VA is Quiescent's most ambitious mains device yet, combining four of Quiescent's key technologies clustered around a highly-specified balanced toroidal mains transformer that adds common-mode rejection of power line noise and reactive currents. The unit has six Neutrik Powercon outlet sockets on the back, four offering balanced outputs and two non-balanced. The four balanced outlets are switched on and off by depressing an illuminated button on the front panel.

The transformer is built for Quiescent using Japanese steel in its core, and is rated at 500VA with a maximum load of 2,200 Watts, which may sound quite low to some readers. While stressing that he's not making a point about any particular alternative product, Quiescent's Nigel Payne observes that balanced transformers can be something of a minefield for unwary buyers; because of cost-cutting, in particular in respect of core material quality, some aren't able to achieve more than 60-70% of rated loading before they start causing more sonic problems than they solve. In contrast, the transformer used in the T500VA not only performs right up to its electrical rating but exhibits none of the audible buzz or hum that afflicts some alternatives.

There's also some important context here, partly philosophical; Quiescent has designed the T500VA primarily for system environments where the most power hungry component, the power amplifier, is of relatively modest output. Payne argues that when done 'right', **more than 100 Watts per channel is unnecessary** in most domestic settings. Quiescent has put its money where its mouth is and developed its own 100 Watts per channel solid state amplifier, the T100SPA, with the first demo units having recently been delivered to dealers. But back to the T500VA. If we assume a typical 100 Watt Class AB amplifier has nominal efficiency of 35%, at full rated draw that leaves balanced power headroom for separates such as a streamer, a DAC, a phono stage and so on, none of which individually is likely to want more than 40 Watts, and many quite a bit less. Quiescent says that if the power amplifier is demanding then it should be plugged into one of the two regular outputs on the rear, while the source components – actually most likely to benefit more from the ultra-low-noise power – can use the balanced outputs.





### Sonic degradation

The mains input of the T500VA passes through a proprietary DC-blocking circuit that combines with what is essentially the guts of a Quiescent Mains Module to feed the primary coil of the transformer with 230 Volts stripped of EMI, RFI and mechanical vibration. Quiescent has a patent on the tri-material electrical and vibrational energy absorbing matrix that it builds into many of its products. A specially shaped unit of this is clamped directly to the transformer to soak up localised ultrasonic vibration and to disrupt the local electro-magnetic field. The balanced secondary windings of the transformer are connected to the four rear-panel outputs, each via its own dedicated inline Mains Module, plus Grounding Modules on the earth, further isolating the transformer from any reactive pollution generated by connected audio components. Finally, the two non-balanced outputs are star-earthed to avoid ground loops and are each equipped with their own Mains Modules to mitigate, as before, the sonic degradation that can be caused by reactive loads.

Quiescent has avoided the use of chokes and capacitors in the T500VA, believing that they are an efficient source of vibration that cascades around circuits and intermodulates with the mains frequency. Wiring throughout is solid round-core silver in a Teflon and air dielectric, covered with EMI/RFI absorbent tubing. The chassis is thick aluminium, machined with Quiescent's distinctive acoustically disruptive patterns and surfaces. The T500VA weighs 28Kg and costs £14,500. I will come back to cost shortly.

### Listening

The evaluation of the T500VA posed something of a minor practical challenge since the review system, already includes a good number of Quiescent products, including six Mains Modules, four Speaker Modules, and sets of the company's Component Couplers under every component. Clearly the Mains Modules needed to be temporarily set aside if a fair judgement was to be reached about the T500VA. Ten minutes later, with the Bryston 4B Cubed power amplifier connected to one of the two unbalanced sockets on the T500VA, and the CD transport, DAC and line stage running off of three of the balanced outlets, I was able to press play and take a seat.

I had a good inkling of what to expect. My much earlier purchase of the Mains Modules had been on the back of a trial of demonstration units. The sonic gains had been profound – a lower overall noise floor, greatly suppressed intermodulation artefacts, the un-masking of tonal, dynamic and spatial detail, better timing and a notable uplift in dynamic punch and weight. In terms of its sonic impact, the T500VA was for the most part a like-for-like substitution for these devices, allowing the system to retain all of the above plusses. The immediate impression was that not much changed, if at all. However, by the time the first track had ended it had become apparent that something was different.

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I played *Trypnotyx*, the 2017 recording by Victor Wooten, Denis Chambers and Bob Franceschini, and was intrigued to hear that the words spoken underneath *Take Off*, previously not terribly intelligible, had become perfectly understandable, apparently more forward in the mix. When Wooten's bass entered on the track *A Little Rice And Beans*, **the air in the listening room was compressed notably more than before**, and the tonal and textural content of his playing was also improved. Michael Hedges' 1984 recording *Aerial Boundaries*, stunning before, both for its virtuosity and the quality of the recording, took on new meaning as the enhanced level of dynamic expression turned the individual string plucks on his acoustic guitar into events of intensely focused in-room energy. The noise floor had dropped even further away and there was a heightened sense of musical flow. Every other element being more or less equal, these additional aggregate gains could only be credited to the balanced transformer.

At over £14,000 the T500VA is a costly mains treatment product. However, we might also observe that it is notable value compared to buying the stand-alone equivalents from the Quiescent range. The seven mains modules and the shunt inside it would on their own cost over £17,000 if bought as individual devices, but the T500VA also contains that high quality balanced transformer and it's a six-way silver-wired distribution block as well. It's clearly not going to make any kind of financial sense as an adjunct to a budget audio system, but in the context of a high-end rig, well, that depends.

When I reviewed Quiescent's current generation Speaker Modules and Component Couplers I concluded that in my system the combination lifted sonic performance by around 50%; a judgement that caused raised eyebrows and even prompted mild derision from some quarters. However, I stand by that percentage, regarding it still as a conservative indicator for the gains in my system. The difficulty with this – and it's why I used the word 'depends' in the preceding paragraph – is that the results we hear from the T500VA relate directly to the degree to which our system is hobbled by mains noise. Low noise = small sonic gain; high noise = large sonic gain.

### **Specifications**

*Type: balanced mains power supply*

*Outputs: 4x balanced, 2x direct*

*Input: IEC C16 socket*

*Max load: 2,200W*

*Grounding: M5 binding post*

*Finish: Bead blasted natural or black anodised high-grade aluminium and non-metallic top*

*Size HxWxD: 140 x 440 x 430mm*

*Weight: 28kg*



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