



Test & Computer Services Ltd



AC Power Analysis Industry Test Lab Working with AI Servers

Case Study

Challenge

When an industry leading independent test lab required a more accurate power analysis solution to enable the capability to expand testing into a new generation of AI solutions, they turned to Quarch Technology.

The lab wanted to analyse specialist server systems, running one or more AI accelerators and high end CPUs. They already had basic power analysis from rack mounted PDUs (Power Distribution Units). These provide a decent indication on a per-second basis, but had limited automation and could not sample faster, therefore lacking the granularity the customer required.

Their interest was to measure the total power consumption of AI processing servers, and how the consumption varies between workloads. This data could be used to compare solutions from different vendors, and could also be used to tune AI software, reducing the total energy consumption for a given task.

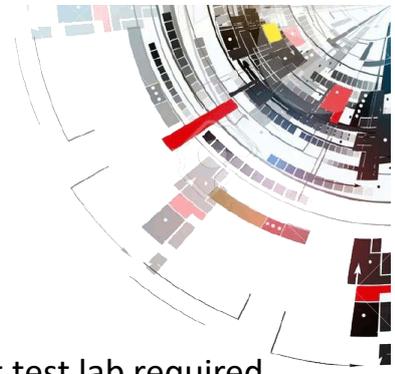
Moving up from their current solution would have required a scope and current probes, such as the Keysight PA220. This is a very expensive solution and requires custom cabling to access the conductors. As a voltage probe is needed to touch a live point in the AC circuit, there is a safety risk.

Another solution would be a 'Power Analyser' such as the Yokogawa PA900 series. This does cost less than the full scope solution, but requires similarly complex setup with multiple probe ports. In some cases, the AC wires need bolted directly to the back of the unit as the measurement is internal. This setup again has various points of risk for the user and requires a high level of training.

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31 Years of Experience





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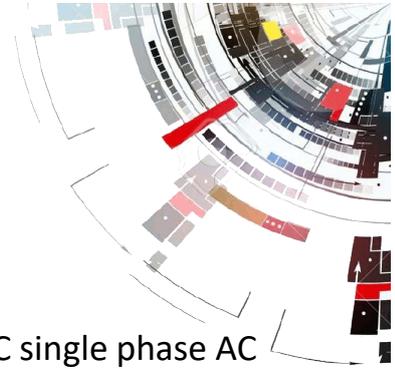


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Case Study (cont.)



Solution

The customer evaluated the Quarch IEC single phase AC version of Quarch's award winning Power Analysis Module (PAM) and was immediately impressed with the units plug and play connectivity, measurement resolution and simplicity of data capture.

Data collection was via a simple Ethernet management port on the side of the unit and with a sampling rate of 8K samples per second, enabled accurate analysis of Frequency, Phase, THD, Power factor and more.

It was sufficient for their needs and vastly better than their current solution.

Quarch Power Studio enabled customised views of the customers data such as statistics, waveform diagrams, etc. to show spikes, transients, harmonic distortion in the waveforms.

In Summary

The Quarch IEC AC solution allowed the customer to capture high resolution data at a much lower cost, meeting their objectives of testing at an elevated performance level. The level of automation they were able to implement using the Quarch solution enabled them to reduce the man hours spent testing and improved the turnaround time of their solutions.

The customer is looking to implement testing with the larger 16/32/63 Amp three phase AC modules in the future.

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