

Volta optimises power usage with wire-free radio monitoring



By their very nature, large enterprises have large data storage and IT requirements. Businesses of this scale based in central London have in Volta a dedicated data centre facility on their doorstep, which is providing the highest levels of resilience, connectivity, security and scalability. The total data volume is enormous and getting larger by the day. It places high demands on the Volta data centre's computing capacity and availability. Effective interaction and optimum capacity utilisation of all technical and infrastructure resources is essential to be able to provide the performance needed to handle this data volume around the clock.

Save with optimal power usage

Special attention is paid here to the efficient load distribution and use of power. Since energy costs today can account for up to 50 per cent of the total operating costs of a data centre, the goal is to exploit every opportunity for optimal



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Protection and safety are very important for the Packet Power wire-free radio technology. The meshed network design is very resilient and uses communication paths, protocols, and dynamic frequency bands especially optimised for data centre monitoring to prevent interference with other wireless services and devices in the data centre. The monitoring solutions allow to centrally control and manage several hundred environmental sensors (e.g. for temperature, humidity and differential pressure) and energy parameters like volts, amperes, kW, kWh, kVA, phase angle and total current for any server room, cabinet, PDU or single IT device. All monitoring devices instantly begin to share information via a self-configuring wire-free network as soon as they are plugged in. Energy usage information is then gathered for use by intuitive management tools or for distribution to a wide variety of DCIM or BMS applications.

capacity management and energy savings, so that operation of the entire data centre infrastructure is as safe, efficient and economical as possible. And precisely with this in mind, John Speers, Facilities Manager at Volta, and his team rely on a wire-free radio monitoring solution called Packet Power that was supplied by the company Daxten.

Improved capacity management

“With continuously increasing rack deployment and a multitude of servers and other active components in operation for our clients, it is easy to imagine the enormous power consumption we have to deal with,” said John Speers. “Our goal was therefore, to find a tool to record, monitor and analyse all of the key values for power at rack PDU-level to improve the load management.” To meet this goal, different monitoring solutions from different vendors were carefully examined at Volta.

One of the main reasons Packet Power technology was chosen is that it is not connected by cables or based on a bus system like other solutions. Instead, it transmits the power measurement data wire-free within the Volta data centre. The installation was therefore especially quick and easy, because there are no physical connections between the individual wire-free radio monitoring modules and because the measurement data is transmitted to dedicated gateways that transfer the wire-free radio data received to SNMP or Modbus TCP/IP.



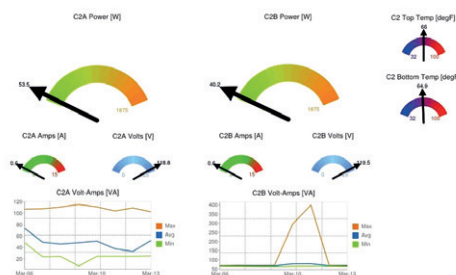
Power values are easily recorded by using the power cable with integrated wire-free monitoring module.



The Packet Power gateway receives all power and environmental data collected by the wire-free monitoring modules and routes it via SNMP or Modbus TCP/IP to a BMS or DCIM application.



The Environmental Monitor unit monitors temperature, humidity and differential pressure at different measuring points in the rack.



The dedicated EMX management tool provides actual and trend reports on power usage and environmental values and issues alerts in the event of critical conditions.

Unparalleled setup

After installing approximately 1000 Packet Power measuring modules the setup function is still described by the Volta data centre experts as an amazing feature: As soon as a wire-free radio monitoring module is activated, it automatically configures itself, begins taking measurements and exchanges its data with all other monitoring modules in the wire-free network. In practice this feature saved the technicians many hours and days of configuration work.

Even when scaling up, this self-configuring function lets them spend a lot more time doing other important tasks: Because it only takes a few minutes to integrate additional wire-free radio monitoring devices: Existing power cables for rack PDUs are replaced with the Packet Power cables with integrated wire-free radio monitoring modules and finally, the units are activated to complete the setup.

For future needs, the system also allows the seamless integration of Packet Power wire-free radio monitoring modules to measure environmental conditions like temperature, relative humidity and differential pressure.

Control centre for optimal resource utilisation

The EMX Energy Portal, the dedicated management tool, proved to be intuitive and user-friendly for John Speers and his colleagues. It turns all of the data collected by the monitoring modules and routed from the gateway into actual and trend reports, e.g. on power capacities and power usage effectiveness (PUE), and issues a warning if critical power values are reached.

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About Volta

Volta is an award-winning, carrier-neutral data centre in Central London. Located in Great Sutton Street and built to Tier III standards, Volta is a 91,000 sq ft data centre. Designed to address the ever-increasing infrastructure demands of businesses, Volta provides organisations and companies – including cloud and managed service providers, media and financial services – with a highly flexible, secure and scalable IT and hosting environment. Volta offers unparalleled resilience in central London, benefiting from two separate 33kV supplies, with ultra-fast connectivity linking customers to a variety of world-class carriers, cloud providers, networks and major Internet exchanges.

For more information, please see www.voltadatacentres.com



Company profile Daxten

Daxten was founded in 1994 as Dakota Computer Solutions. As a manufacturer and distributor of innovative solutions, Daxten is at the forefront of promoting energy efficiency within the data centre. The company offers cutting edge cooling optimisation (CoolControl), power distribution, monitoring and data centre infrastructure solutions which improve the resource efficiency and reliability of the data centre. Daxten is headquartered in London and Berlin.

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