

# Digital Sense Develops Australia's Highest Density Data Centres With Emerson Network Power Australia

IT company Digital Sense is developing Australia's highest density data centres with multi-million dollar infrastructure technology and solutions from Emerson Network Power Australia to support the growing demand for high-powered computing from Australia's largest government and corporate organisations.

The first of two data centres is being commissioned in Kenmore, Brisbane, with Emerson receiving an initial order worth \$3.2 million for the first phase of the project – a 400 square metre section of the 1,600 square metre data centre. The Kenmore facility will be the first purpose-built high-density data centre in Australia – 2,000 watts per square metre of floor space. The largest data centres currently in operation top out at less than 1,000 watts per square.

Digital Sense is also building a second data centre with Emerson, code-named Data Centre City, with a total area of 10,000 square metres. Data Centre City will supersede Kenmore with a staggering capacity of 6,500 watts per square metre to become Australia's largest high-density facility. It will also support up to 25 kilowatts of cooling per rack with Emerson's supplemental cooling technology.

“High density computing is a reality in today's highly competitive, information-driven global economy, and demand is outstripping supply for the highest possible performance and security from outsourced data centre facilities,” says Michael Tran, Director, Digital Sense.

“The problem we face in Australia – and the niche that we're looking to fill – is the lack of true high-density data centres. We have large and successful facilities in Australia, but none of them are purpose-built to support true high-density computing across every metre of floor space, and that's where we come in.”

Tran says that demand is particularly strong from large government departments, Australia's booming mining conglomerates, large corporate operations, web hosting services and medical industries.

“These companies can't run their operations without top-notch information systems working 24/7 to support millions of customers around Australia and around the world,” he says. “They're also bound by strict corporate governance laws, so backup and recovery services – which often means locating equipment in multiple secure sites – are never far from the top of their list.”

Mark Deguara, National Product Manager at Emerson Network Power Australia, says that true high-density facilities pose multiple challenges, not least being able to manage and support the extreme levels of power and heat that high-density equipment like multi-core blade servers consumes and rejects respectively.

“Australian companies are demanding computer power an order of magnitude more powerful than what they were using only a few years ago – high-density blade servers processing millions of transactions per second to keep them globally competitive,” says Deguara.

“At the same time they don't have the skills, resources or space to house and manage this equipment themselves, so they need to find suitable facilities to host their business-critical systems.”

Tran adds that all this power comes at a price. “Aside from the initial challenges of finding a secure site, well removed from obvious hazards like bushfires and flight paths, and located close enough to a power grid that can supply the power we need to keep the equipment running reliably – we then have the not-so-small issue of keeping that equipment cool and ensuring adequate resilience for any eventuality.

“That's where Emerson comes in. They're the only supplier in Australia – and probably the world – that has the holistic solutions we needed to power, cool and protect the equipment we've specified for our data centres,” he says.

Emerson recently launched a vendor-neutral framework called Energy Logic, designed to minimise power consumption, space and heat rejection in high-density data centres through optimal IT equipment choices, operational best practices and energy-efficient infrastructure. Emerson used feedback from data centre customers at its twice-yearly user group meetings to create the Energy Logic framework, which represents the industry's only cohesive, holistic approach for reducing data centre energy use.

Emerson's solution for Digital Sense includes the unique aluminium-frame Knurr racks to hold multiple blade servers in place without putting significant added weight on the floor supports or compromising airflow; Liebert UPSs to filter clean power from the grid and to protect the dual power and communication feeds going into each rack; ASCO switches to reliably convert from mains power to generator power in the event of a blackout or routine maintenance without downtime; and the Liebert X-Treme Density (XD) supplemental cooling system to support scalable rack cooling from as little as one kilowatt to more than 25 kilowatts per rack.

“Emerson's Adaptive Architecture means that Digital Sense can establish a customer at a relatively small base and quickly expand their equipment without having to upgrade or change the support infrastructure,” says Deguara.

“It's like plug and play cooling. For example, a blade server can be added to an existing rack and the XD cooling system will dynamically

adapt to the extra heat rejection by simply plugging in an additional cooling pipe. It takes minutes to add additional cooling capacity, as the click-connect system requires no tools and there is no disruption to the IT equipment. With the advent of these new facilities, gone are the days that companies have to move their equipment to another location once they've outgrown their initial power requirements.

Digital Sense conducted extensive research at some of the world's largest high-density data centres in the United States to get a better understanding of the logistics required to design, build and operate a similar facility in Australia.

"We discovered that capacities of 30-to-40 kilowatts per rack would be very feasible in the next two to three years. That's why it's so important to get the right mix of infrastructure from the start. The more expensive it is to power and cool the equipment, the more expensive the operating costs. Making the wrong infrastructure choices at the design stage can potentially cripple a high-density data centre in the long run.

Construction has already started on Digital Sense's Kenmore data centre, which will be open for business later this year. Data Centre City, still in the planning stages, is expected to come online sometime in 2008.

#### About Emerson Network Power

Emerson Network Power, a business of Emerson (NYSE:EMR), is the global leader in enabling Business-Critical Continuity. The company is the trusted source for adaptive and ultra-reliable solutions that enable and protect its customers' business-critical technology infrastructures. Backed by the largest global services organization in the industry, Emerson Network Power offers a full range of innovative power, precision cooling and connectivity products and services for computer, communications, healthcare and industrial systems. Key product brands within the Emerson Network Power family include Liebert, ASCO, Astec, and Lorain. The Liebert Adaptive Architecture creates power, cooling and monitoring platforms for IT systems that combine high reliability and flexibility while delivering the lowest total cost of ownership. For more information on Liebert visit [www.Liebert.com](http://www.Liebert.com). For more information on the full spectrum of enterprise-wide solutions from Emerson Network Power, visit [www.emerson.com](http://www.emerson.com).

#### About Emerson

Emerson (NYSE: EMR), based in St. Louis, is a global leader in bringing technology and engineering together to provide innovative solutions to customers through its network power, process management, industrial automation, climate technologies, and appliance and tools businesses. Sales in fiscal 2007 were \$22.6 billion. For more information, visit [www.emerson.com](http://www.emerson.com).

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