



# Home on the range

**Z**igBee has fast become the global wireless language that connects vastly different devices together to enhance our everyday lives. Said to offer reliability, low cost and low power, ZigBee targets rf applications requiring low data rates, long battery life and secure networking. With the recent launch of ZigBee Pro to a growing audience of home automation customers, ZigBee is set to bring the house down!

One company helping to enable this emerging market is Jennic, which recently announced a starter kit to address the needs of developers wanting to add ZigBee wireless connectivity to their product ranges, but who don't have the necessary rf design or software development experience.

"How we address the needs of developers is vital," began Jennic's vp of marketing, Tony Lucido, "because we're increasingly faced with a diverse customer base and skill set. Many customers already have experience in developing 'like' controllers, but find they now need to offer wireless connectivity in applications like home automation."

The company decided to approach this segment by developing modules that remove the rf complexity by providing reference designs, or an implementation of the entire rf system on a single module supported by all the relevant approvals.

"Developers simply buy a module and lay it down on the circuit board so they'll have less to worry about on the rf design side," explained Jennic's product market-

How increasing adoption of ZigBee wireless will soon be helping to get our houses in order.

By **Mike Richardson**.

ing manager Colin Faulkner. "In many respects, it behaves exactly like the chip because it has access to the chip's I/O. The modules come qualified with all necessary regulatory approvals, which means we help customers avoid the headache of rf testing and circuit development."

Jennic offers a home automation demo with its standard evaluation kit which consists of one controller board with an lcd and four additional boards called sensor nodes. The demo can be set up so users can toggle leds on and off between the controller and the sensor to measure temperature, humidity and light. "This probably

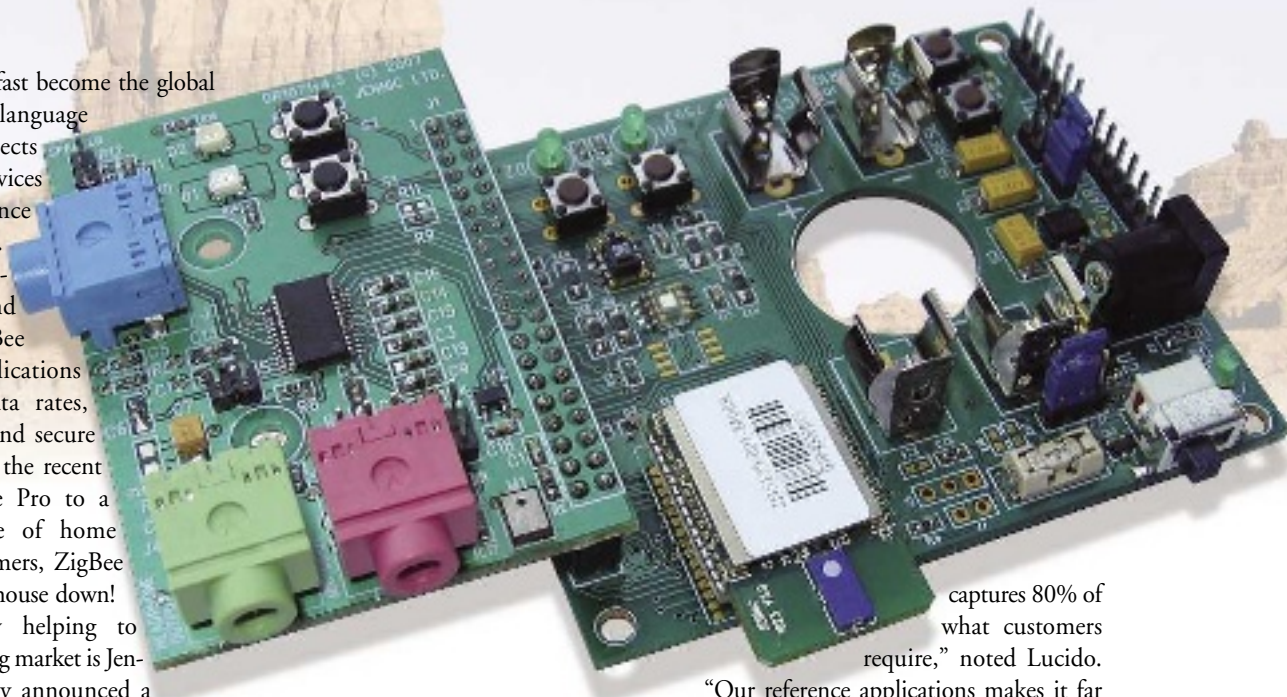
captures 80% of what customers require," noted Lucido.

"Our reference applications makes it far easier for developers to start tailoring what we've provided for their own applications."

Lucido says that, for full industry adoption, ZigBee wireless must satisfy two main requirements: increased ease of use and a substantially lower cost.

"Improving ease of use will allow us to address a far broader customer base," he avowed, "and, by achieving the correct price point, customers can purchase in high enough volumes to enable their applications. This will only happen when prices drop beneath \$2. Now ZigBee Pro is fully ratified, we're seeing more stability in the ZigBee Alliance's standard. This means many more companies will become motivated to develop products."

Bob Gohn, vp of marketing for Ember Systems, claimed ZigBee Pro 3.1 was important not only for Ember, but also for the industry. "It's the first commercial stack which implements the ZigBee Pro feature set. It's something our customers have been anticipating for some time."





"We've designed products that work across a variety of clever sensors using ZigBee."

Dr Laura James, **AlertMe**

Gohn said there were a number of important aspects of ZigBee Pro, including many to one and source routing, asymmetric link handling and stochastic addressing. But he pointed to an Ember specific enhancement that allows denser

networks. "Scaling is not necessarily about network size, it's about how many nodes are close together. If there are too many, then the routing tables will overflow. Ember's intelligent table management delivers table stability and efficiency."

Texas Instruments' general manager of low power rf software development Kobus Marnebeck believes the launch of ZigBee Pro adds a number of features that are more applicable for large networks.

"Customers involved in home automation applications won't necessarily gain much by going to ZigBee Pro; in fact, it might make it more complicated as it requires more code without providing any extra functionality or value. We look at the customer applications and help steer them towards a ZigBee Pro or non Pro solution."

Marnebeck says the applications for ZigBee are diverse, with some that even the ZigBee Alliance couldn't have imagined when it defined the standard.

"I assumed home automation would be one of the first segments to take off because it's consumer driven, but it's been much slower than I anticipated. I would blame this on vendors bringing expensive home automation products onto the market.

"As a chip supplier, I'm disappointed to see that while home automation manufacturers now have the wireless technology available to offer systems to the consumer and retail chains, these solutions still haven't materialised. Much of this is down to pricing, as many ZigBee systems now coming onto the market are still too expensive."

He adds that one key area on which the ZigBee Alliance is concentrating is energy management and efficiency, or what it calls

AMI – advanced metering infrastructure.

"This is due to the increasing drive for green technology and energy conservation and it's one of the most prominent areas that TI is concerned with at present."

### Alliance to appliance

Home automation specialist AlertMe says the ZigBee Alliance has made bold strides with the release of the Home Automation Application Profile.

AlertMe provides intelligent home security and monitoring services that connects users straight to their homes via broadband and a variety of intelligent sensors around the house. AlertMe immediately alerts house owners of potential home security breaches and enables them to use mobile phone networks or the internet to check or respond to the incident.

"The home security industry hasn't changed much for many years," explained AlertMe's vp of engineering Dr Laura James. "We decided to look at the latest technologies available to update this industry, particularly in the ways the internet and mobile phones could be used to provide a new context in home security. We've designed products that work across a variety of clever sensors using ZigBee to communicate the alerts via user's broadband connections and mobile phone networks, should the broadband connection go down."

AlertMe has designed all its products with ZigBee 2006 and ZigBee Pro in mind and most of the development work has been done to target ZigBee Pro because it offers higher security levels and the robustness needed for its system. "We've been beta testing EmberZNet PRO 3.1 and this is certainly accelerating our path to achieving ZigBee certification," said Dr James.

Although AlertMe is currently looking at security applications, it's looking to broaden its market. "There are many more areas we'll look to innovate in the future, such as central heating and lighting control, together with energy efficiency. This will include micro generation of power in the home using ZigBee to monitor the feasibility and link it directly into the rest of your home automation network," Dr James concluded. ☺

