



ZigBee®

# SUCCESS STORY

Control your world™

## S3C and ZigBee, Going Where Wireless Technology Has Never Gone Before

Information is power. Companies worldwide understand the value of information and many invest heavily in gathering, incorporating, and analyzing data to reduce costs, refine quality, boost revenue, and improve customer satisfaction. Many of these same companies are looking for ways to create more "eyes" and "ears" that gather data and delve ever deeper into information and processes. Today, wireless technology makes it possible to gather more data from more places than ever before.

Sensor manufacturer S3C uses ZigBee® wireless mesh network to provide a breakthrough solution overcoming traditional barriers while simultaneously making the data-gathering process more economical. Since ZigBee's mesh network is ideal for challenging concrete and metal-filled buildings, it is a perfect fit for the industrial environments S3C serves. Wireless sensors can now be placed in hard-to-reach or hazardous locations inaccessible to wired networks.

Wired networks, even if they could be built around the physical obstacles, create expensive and hazardous installation conditions in many industrial environments. These challenging industrial conditions, which have previously eluded wired and other wireless network control, have been limited to periodic, labor-intensive monitoring. However, in a ZigBee network, long lasting battery operated modules and sensors transmit and receive data wirelessly with the other ZigBee sensors in the network. The ZigBee mesh network enables information to easily navigate around the nooks and crannies that block other wireless technologies from communicating. Now industrial facilities reliably receive sensor data at their monitoring stations



### Streamline Industrial Process Controls

S3C recently launched its first ZigBee Certified Product pressure sensor module to monitor conditions ranging from gas pressure in energy management environments to filter status in semiconductor processing environments. The wireless sensor frees facility operators from costly and periodic manual control of many conditions previously inaccessible to automation over wired networks.

The GC63-Wireless sensor uses S3C's ZigBee-certified radio board, the XM2400. The radio board can be used in any wireless industrial sensor S3C or another manufacturer, to measure pressure, temperature, humidity or flow.



Wireless automation has proven it can save up to **80 percent** on wiring costs, reducing labor costs, and improving system performance.

#### BUSINESS GOALS

ZigBee open standards are part of S3C's development strategy. They enable S3C to leverage one product in different markets and to reduce development costs and time by using standards compliant components. ZigBee's wireless mesh network meets S3C's open standard requirement even as it conquers the physical obstacles to wired networking in industrial facilities.

#### TECHNOLOGY SOLUTION

S3C combined its XM2400 radio board with Texas Instrument's ZigBee-compliant single-chip transceiver to create the GC63-Wireless. S3C developed a manufacturer specific profile for the XM2400 to ensure it would work with the ZigBee-based Texas Instruments transceiver. S3C and other sensor manufacturers can leverage the XM2400 to create diverse and even competing industrial sensors using ZigBee.

XM2400's diverse application expands the market opportunity for S3C's development investment. The GC63-Wireless sensor accommodates regular reconfigurations. It easily reconfigures to accommodate changing production requirements, whether they occur hourly, daily, monthly or annually.

## ZigBee and S3C Reduce Costs, Improve System Control

Wireless automation has proven it can save up to 80 percent on wiring costs, reducing labor costs, and improving system performance. S3C identified two opportunities – clipboard control and control systems as processes that would benefit from ZigBee sensors and controls.

"We wanted to create an easy first step for our customers. Clipboard control is the logical and easy way to familiarize customers to wireless sensor applications because it quickly and clearly shows labor savings and improved processes," said Finbarr Crispie, chief operating officer, S3C.

Clipboard controls traditionally require a person to manually read and record sensor information in a facility. By replacing those manual readings with automated, wirelessly networked sensors, facility operators gain tighter control over the system. Automatic alerts or alarms can immediately notify operators via email or text messages when pressure levels require action. This immediate notification allows operations to act faster, ensuring that production is adjusted when necessary rather than when the next intermittent manual collection round occurs.

For example, in an energy plant, gas information is traditionally taken manually on the factory floor and delivered to another person to enter into the database for action. With S3C's SensGate residential gateway, bundled into the GC63-Wireless sensor, the measurement is communicated immediately and automatically. It is directly sent to the database for immediate attention by departments like billing and maintenance, saving labor costs and ensuring both accurate billing along with increased safety. And, all this is accomplished without running any new wires.

## Increase Market Share with ZigBee-Certified Products

"Standards are important because the market wants products and solutions that work together," said David Howard, director of engineering, S3C. "Flexibility is a key benefit to open standards – and ZigBee networks."

S3C also designs, manufactures and sells next-generation wired and wireless sensors for automotive and industrial use. It joined the ZigBee Alliance and immediately gained access to standards testing and the product certification process. The ZigBee Certified Product testing program offers original equipment manufacturers a formal process of proving the robustness of their ZigBee products. The program relies upon internationally recognized testing facilities equipped with ZigBee networks to prove products communicate reliably. ZigBee Certified Products are the only products that can wear the ZigBee logo. They also increase market potential because they have proven their interoperability with other ZigBee products and solutions.

## BENEFITS

- ZigBee open standards
- Provide flexible solutions to technology requirements
- Offer cost effective product choices
- Reduction in peak power prices for electricity
- Readily adapt to changing business conditions and communications technologies

