With a ZigBee wireless network, your home devices can easily be connected to each other. A wireless home automation system dramatically reduces installation cost and time, saves energy and makes it easy to add new devices.
**What is the ZigBee™ standard?**

The ZigBee standard was developed for wireless communications. It was developed by the ZigBee Alliance, which is a global ecosystem of over 200 major OEMs creating wireless solutions for home, commercial and industrial applications.

It is the only global wireless communications standard that allows the development of easily deployable, low-power monitoring and control products. The ZigBee Alliance is supported by several multi-billion dollar OEMs, as well as major suppliers.

**Primary target markets**

- Building and industrial automation
- Home control/security
- Medical
- Logistics and asset tracking
- Sensor networks
- Active RFID

ZigBee technology is being embedded into a growing number of products across consumer, commercial, industrial and government markets worldwide. The ZigBee communication standard is key to the growth of wireless home and building automation applications where various end products need to communicate with each other.

This is enabling companies to have for the first time a simple, reliable, low-cost and low-power standard-based wireless platform optimized for the unique needs of remote monitoring and control applications.

**Why the ZigBee standard?**

The ZigBee standard is the only standard that specifically addresses the typical requirements for wireless control and monitoring applications such as:

- Large number of nodes/sensors
- Very low system/node costs
- Operation for years on inexpensive batteries
- Reliable and secure links between network nodes
- Easy deployment and configuration
- Global solutions

For OEMs, it is much more cost effective to design applications based on the standardized ZigBee technology than create a new proprietary solution from scratch. Furthermore, OEMs can obtain global solutions and independence from RF IC vendors due to the 2.4GHz standardized radio by IEEE 802.15.4. Existing manufacturers of wired field bus technologies who migrate to the ZigBee standard will not only reduce installation costs for their customers, but will also reduce their product’s bill of materials due to the cost-effectiveness of ZigBee-compliant solutions.

**ZigBee-compliant platform**

Texas Instruments (TI) offers customers a complete hardware and software ZigBee-compliant platform that has been certified by the ZigBee Alliance. The platform is a reference design, which includes the IEEE 802.15.4 PHY/MAC and the ZigBee stack up to and including the application framework. This forms a solid base for ZigBee system development. In addition, TI supports all application profiles approved by the ZigBee Alliance. Customers who base their development on TI’s certified ZigBee-compliant platform will shorten time to market and reduce costs for their system design and ZigBee end-product certification. Furthermore, customers who use a public ZigBee Application Profile are ensured full interoperability with other ZigBee systems that use the same profile.

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ZigBee™ Alliance

Wireless Control That Simply Works
ZigBee mesh networking

Above the PHY and MAC layers defined by IEEE 802.15.4, ZigBee specifications enable reliable and secure mesh, star and cluster-tree network topologies with interoperable application profiles. Mesh networks allow for high levels of reliability and scalability by providing alternative routes through the network.

TI ZigBee goals:

• To provide consumers with ultimate flexibility, mobility, and ease of use by building wireless intelligence and capabilities into everyday devices.
• Enable customers to have a simple, reliable, low-cost and low-power global standard-based wireless platform optimized for the unique needs of remote monitoring and control applications.

TI low-power RF products for ZigBee

<table>
<thead>
<tr>
<th>Product</th>
<th>IEEE 802.15.4 ZigBee-compliant Dev. Platform</th>
<th>Transceiver</th>
<th>System-on-Chip</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC2420</td>
<td>X</td>
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<tr>
<td>CC2430</td>
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<tr>
<td>CC2431*</td>
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</tbody>
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* With integrated location engine

- IEEE 802.15.4/ZigBee-compliant development kits
- High-performance radio and robust reference designs
- Free IEEE 802.15.4 MAC software

Z-Trace™

The Z-Trace tool provides debug information output through the serial port of the target (available only with chipset development kits). The Z-Stack is fully configurable, extremely portable, robust, reliable and easy to maintain on any embedded platform.

ZigBee training course

TI’s ZigBee training course is the best way to get on the fast track to ZigBee success. This hands-on, two-day course provides you with a solid foundation both in ZigBee protocol and in Z-Stack-based product development. The course is taught by an experienced engineer and provides information, techniques, and strategies you will not find elsewhere. Get face-to-face access to expert assistance and answers that address your specific needs. Even if you are currently just evaluating ZigBee standard, this training course is designed to get you started the right way.

For training dates and locations worldwide, go to: www.ti.com/zigbeetraining

For additional technical information about TI’s ZigBee solutions, including samples, development kits, software and more, visit: www.ti.com/zigbee
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