

# ZigBee Network Protocols and Applications

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## Book Content

Compared with other wireless communication technologies, such as Bluetooth, WiFi, and UWB, ZigBee® is a far more reliable, affordable, and energy-efficient option. It is also the only global wireless communication standard for easily deployed, low-power consumption products.

ZigBee® Network Protocols and Applications provides detailed descriptions of ZigBee network protocols and explains how to set up and develop your own ZigBee-based customized applications with step-by-step instructions. Starting with a brief introduction to near-field communications, low-power communications, and related protocols, it discusses ZigBee architectures, standards, and protocols. It also addresses potential issues such as power management, security, reliability, quality of service, topology control, MAC routing, and transport protocols.

Emphasizing development tools that are based on readily available commercial kits, the book illustrates ZigBee applications across a wide range of fields. Each chapter presents the contributions of a different group of experts from around the world. The book is organized into five major parts:

1. Introduces near-field communications (NFC), low-power communications, and

ZigBee along with related protocols such as Bluetooth, WiFi, UWB, and Wireless USB

2. Describes ZigBee architectures, standards, and protocols
3. Examines ZigBee performance improvement and addresses potential issues
4. Illustrates ZigBee applications across a range of fieldsâ€”explaining how to develop ZigBee applications that are based on commercially available kits and hardware
5. Compares and contrasts ZigBee with 6LoWPAN, Z-Wave, Wireless Hart, and RFID

Providing step-by-step instruction on how to set up and develop ZigBee-based applications, this book is a must-read for researchers and engineers. Supplying the required foundation and network protocols, it is also suitable for use as a textbook for senior undergraduate and graduate courses in electrical or computer engineering programs.

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