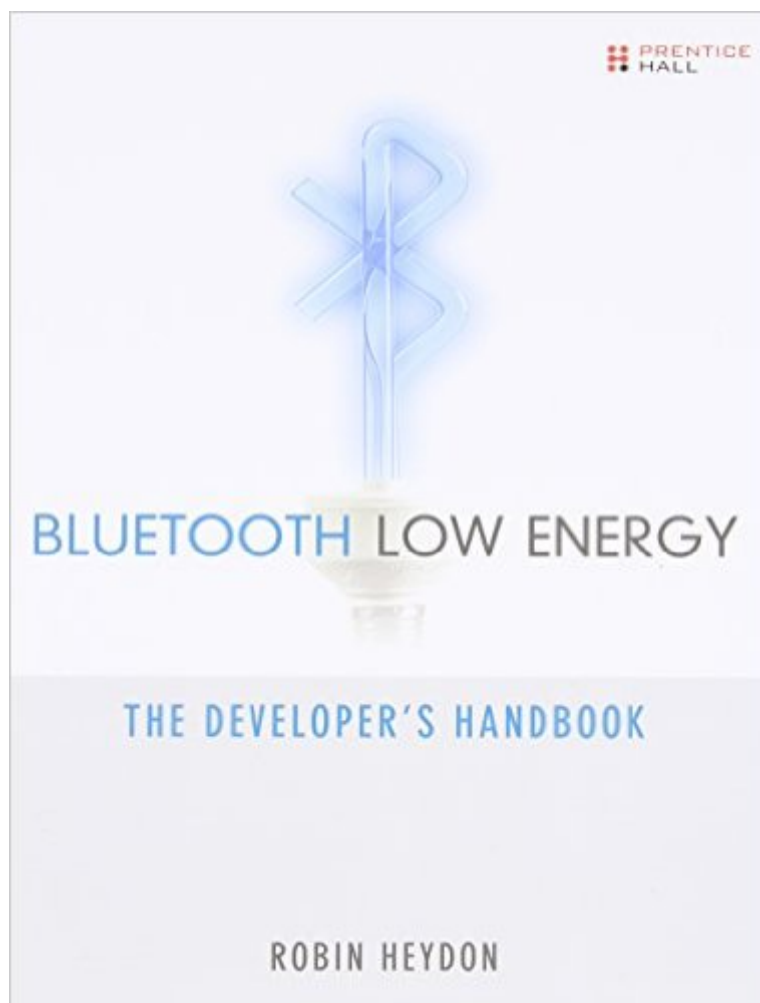The book was found

Bluetooth Low Energy: The Developer's Handbook

Synopsis

The First Complete Guide to Bluetooth Low Energy: How It Works, What It Can Do, and How to Apply It Â A radical departure from conventional Bluetooth technology, Bluetooth low energy (BLE) enables breakthrough wireless applications in industries ranging from healthcare to transportation. Running on a coin-sized battery, BLE can operate reliably for years, connecting and extending everything from personal area network devices to next-generation sensors. Now, one of the standardâ ™s leading developers has written the first comprehensive, accessible introduction to BLE for every system developer, designer, and engineer. Â Robin Heydon, a member of the Bluetooth SIG Hall of Fame, has brought together essential information previously scattered through multiple standards documents, sharing the context and expert insights needed to implement high-performance working systems. He first reviews BLEâ ™s design goals, explaining how they drove key architectural decisions, and introduces BLEâ ™s innovative usage models. Next, he thoroughly covers how the two main parts of BLE, the controller and host, work together, and then addresses key issues from security and profiles through testing and qualification. This knowledge has enabled the creation of Bluetooth Smart and Bluetooth Smart Ready devices. Â This guide is an indispensable companion to the official BLE standards documents and is for every technical professional and decision-maker considering BLE, planning BLE products, or transforming plans into working systems. Â Topics Include BLE device types, design goals, terminology, and core concepts Architecture: controller, host, applications, and stack splits Usage models: presence detection, data broadcasting, connectionless models, and gateways Physical Layer: modulation, frequency band, radio channels, power, tolerance, and range Direct Test Mode: transceiver testing, hardware interfaces, and HCI Link Layer: state machine, packets, channels, broadcasting, encryption, and optimization HCI: physical/logical interfaces, controller setup, and connection management L2CAP: channels and packet structure, and LE signaling channels Attributes: grouping, services, characteristics, and protocols Security: pairing, bonding, and data signing Generic Access Profiles: roles, modes, procedures, security modes, data advertising, and services Applications, devices, services, profiles, and peripherals Testing/qualification: starting projects, selecting features, planning, testing, compliance, and more

Book Information

Paperback: 368 pages

Publisher: Prentice Hall; 1 edition (November 7, 2012)

Language: English

ISBN-10: 013288836X

ISBN-13: 978-0132888363

Product Dimensions: 7 x 1 x 8.9 inches

Shipping Weight: 1.3 pounds (View shipping rates and policies)

Average Customer Review: 4.5 out of 5 starsÂ Â See all reviewsÂ (35 customer reviews)

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Customer Reviews

Are you an engineer, application developer, designer or marketing specialist, who is thinking about developing a product that incorporates Bluetooth low energy? If you are, then this book is for you! Author Robin Heydon, has done an outstanding job of writing a book that is a complete developer's handbook to how Bluetooth low energy technology came about, why it was designed, the way it was designed and how it works.Author Heydon, begins with a brief introduction to Bluetooth low energy, and discusses its design goals. Then, the author discusses the foundations upon which the low energy architecture was designed. Next, he introduces the main system architecture fir low energy, from the controller, through the host, and up to the applications. The author also describes the new usage models that the low energy technology enables. He continues by showing you how devices communicate wirelessly with one another. Next, he highlights the Direct Test Mode and its role in performing low-cost, tome-efficient testing of the radio. The author also introduces the lowest layers of protocol that describe packets, advertising, and how to create a connection. He continues by describing the interface that hosts can use to talk with a controller and get it to do useful things. Then, the author describes the multiplexing layer. Next, he explains how a stateless protocol can be used to obtain the state of a device efficiently. The author also discusses the main body of the protocol that is used to provide security services. He continues by tying all of the pieces of the puzzle together into a high level abstraction that application writers can use. Next, he shows you how an application can use Bluetooth low energy to interact with peripherals.

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