1. Record Nr. UNINA9910299713803321

Autore	Thotahewa Kasun Maduranga Silva
Titolo	Ultra Wideband Wireless Body Area Networks / / by Kasun Maduranga Silva Thotahewa, Jean-Michel Redouté, Mehmet Rasit Yuce
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2014
ISBN	3-319-05287-X
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (180 p.)
Disciplina	004.68 610.28 620 621.3815
Soggetti	Electronic circuits Biomedical engineering Signal processing Image processing Speech processing systems Electrical engineering Circuits and Systems Biomedical Engineering and Bioengineering Signal, Image and Speech Processing Communications Engineering, Networks
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Wireless Body Area Network and Ultra-Wideband Communication -- MAC Protocols for UWB Based WBAN Applications -- Design and Simulation of a MAC Protocol for WBAN Communication Scenarios -- Hardware Architectures for IR-UWB Based Transceivers -- An Ultra-Wideband Sensor Node Development with Dual-Frequency Band for Medical Signal Monitoring -- System Implementation and Evaluation of an Energy Efficient UWB Based MAC Protocol for Wireless Body Area Networks -- Electromagnetic Effects of IR-UWB Implant

Communication.-.

Sommario/riassunto

This book explores the design of ultra wideband (UWB) technology for wireless body-area networks (WBAN). The authors describe a novel implementation of WBAN sensor nodes that use UWB for data transmission and narrow band for data reception, enabling low power sensor nodes, with high data rate capability. The discussion also includes power efficient, medium access control (MAC) protocol design for UWB based WBAN applications and the authors present a MAC protocol in which a guaranteed delivery mechanism is utilized to transfer data with high priority. Readers will also benefit from this book's feasibility analysis of the UWB technology for human implant applications through the study of electromagnetic and thermal power absorption of human tissue that is exposed to UWB signals. • Describes hardware platform development for IR-UWB based WBAN communication; • Discusses power efficient medium access control (MAC) protocol design for IR-UWB based WBAN applications; • Includes feasibility analysis of the UWB technology for human implant applications through study of electromagnetic and thermal effects caused by UWB signals; • Includes implementation and experimental evaluation of a UWB MAC protocol in hardware platforms.