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Nota di contenuto	Foreword; Preface; Chapter 1 Introduction to Body-Centric WirelessCommunications; 1.1 What are Body-Centric Communications; 1.1.1 Off- to On-Body Communications; 1.1.2 On-Body Communications; 1.1.3 Medical Implants and Sensor Networ; 1.2 Overview of Systems; 1.2.1 Narrowband Systems; 1.2.2 Wideband Systems; 1.3 Overview of Applications; 1.4 New Trends and Progress Since the Fi; 1.4.1 Propagation Characterization and C; 1.4.2 Measurement Methods; 1.4.3 Antenna De-embedding; 1.4.4 Materials; 1.4.5 Modeling of Body Dynamics; 1.4.6 Standardization; 1.5 Layout of the Book; References. Chapter 2 Electromagnetic Properties and Modelingof the Human Body2.1 Electromagnetic Characteristics of H; 2.2 Physical Body Phantoms; 2.2.1 Liquid Phantoms; 2.2.2 Semisolid (Gel) Phantoms; 2.2.3 Solid (Dry) Phantoms; 2.2.4 Examples of Physical Phantoms; 2.3 Numerical Phantoms; 2.3.1 Theoretical Phantoms; 2.3.2 Voxel

Phantoms; 2.4 Numerical Modeling Techniques for An; 2.4.1 Introduction of Numerical Techniqu; 2.4.2 On-Body Radio Channel Modeling; 2.5 Modeling of Dynamic Body Effects; 2.5.1 Methodology; 2.5.2 Measurements and Model Validation; References.

Chapter 3 Antenna Design and ChannelCharacterization for On-BodyCommunications at MicrowaveFrequencies3.1 Introduction; 3.2 Measurement Methods; 3.2.1 Connection Between Antenna and Mea; 3.2.2 Antenna De-embedding; 3.3 Body-Centric Channel Measurement and; 3.3.1 Path Gain; 3.3.2 Channel Statistics; 3.3.3 Channel Polarization Effects; 3.4 Antenna Design; 3.4.1 Performance Comparison; 3.4.2 Antenna-to-Surface Wave Coupling; 3.4.3 Antenna Match and Efficiency; 3.5 Multiple Antenna Systems; 3.5.1 Antenna Diversity; 3.5.2 MIMO; 3.5.3 Interference Cancellation; 3.6 Systems Modeling; 3.7 Conclusions.

Chapter 5 Ultrawideband Technology for Body-Centric Wireless Communications5.1 Overview; 5.2 UWB Antennas for Body-Centric Wirele; 5.2.1 Design and Analysis; 5.2.2 Measurements; 5.2.3 Concluding Remarks; 5.3 Channel Simulation and Measurement M; 5.3.1 Simulation of the Radio Propagatio; 5.3.2 Measurement of the Radio Propagati; 5.3.3 Concluding Remarks; 5.4 Channel Characterization and Modelin; 5.4.1 General Aspects; 5.4.2 Personal Area Network Scenarios; 5.4.3 Body Area Network Scenarios; 5.4.4 UWB Multiband-OFDM Based System Mo; 5.5 Concluding Remarks; References.

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## Sommario/riassunto

Theory, design, and applications of wireless antennas for on-body electronic systems are covered in this updated edition. Advances in physical phantom design and production, recent developments in simulation methods and numerical phantoms, descriptions of methods for simulation of moving bodies, and the use of the body as a transmission channel are discussed as well as applications like Bluetooth headsets together with detailed treatment of techniques, tools, and challenges in developing on-body antennas for an array of medical, emergency response, law enforcement, personal entertainment, and military applications. Topics include: energy propagation around and into the body; on-body communication channels at microwave frequency bands, low frequency bands and ultra wideband systems for WPANs and WBANs; body-centric UWB antennas and channels; wearable mobile, EBG, and "smart fabric" antennas for cellular and WLAN communications; and telemedicine. --

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