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Autore	Dobkin Daniel Mark
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Nota di contenuto	Front Cover; The RF in RFID; Copyright Page; Contents; 1 Introduction; 1.1 What, When, and Where, Wirelessly; 1.2 Why Would You Read This Book?; 1.3 What Comes Next?; Acknowledgements; Further Reading; 2 History and Practice of RFID; 2.1 It All Started with IFF; 2.2 Making It Cheap; 2.3 Making and Selling: Tracking Big Stuff; 2.4 Tracking Small Stuff: AutoID and the Web of Things; 2.5 RFID Systems and Terminology; 2.6 Types of RFID; 2.6.1 Frequency Bands for RFID; 2.6.2 Passive, Semi-Passive, and Active Tags; 2.6.3 Communications Protocols; 2.7 The Internet of Things and UHF RFID Further ReadingHistory; Exercises; 3 Radio Basics for UHF RFID; 3.1 Electromagnetic Waves; 3.2 Describing Signal Voltage and Power; 3.3 Information, Modulation, and Multiplexing; 3.4 Backscatter Radio Links; 3.5 Link Budgets; 3.5.1 Reader Transmit Power; 3.5.2 Path Loss; 3.5.3 Tag Power Requirement; 3.6 Effect of Antenna Gain and Polarization on Range; 3.7 Adding a Battery; 3.8 Propagation in the Real World; 3.9 Capsule Summary: Chapter 3; Further Reading; Signal and Signal Processing; Backscatter Links; Antennas; Reflection from Dielectric

Surfaces; Exercises; 4 UHF RFID Readers

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5.4 Talking Back 5.5 Tag IC Overall Design Challenges; 5.6 Packaging: No Small Matter; 5.7 Other Passive Ways; 5.8 Assault of the Battery; 5.9 Capsule Summary; Further Reading; Passive Tag IC Design; Chip Assembly Techniques; Conductive Inks; SAW Tags; Organic ICs; Battery Tags and Active Sensors; Exercises; 6 Reader Antennas; 6.1 Not Just for Insects Anymore?; 6.2 Current Events: Fundamentals of Antenna Operation; 6.2.1 Got Gain?; 6.2.2 Polarization; 6.2.3 Impedance and Bandwidth; 6.2.4 The Patch Antenna; 6.2.5 It's All on the Datasheet (Except the Price!); 6.3 Antennas for Fixed Readers

6.3.1 Doors and Portals

Sommario/riassunto

This book explains how UHF tags and readers communicate wirelessly. It gives an understanding of what limits the read range of a tag, how to increase it (and why that might result in breaking the law), and the practical things that need to be addressed when designing and implementing RFID technology. Avoiding heavy math but giving breadth of coverage with the right amount of detail, it is an ideal introduction to radio communications for engineers who need insight into how tags and readers work. New to this edition: Examples of near-metal antenna techniques Discu