1. Record Nr. UNINA9910141043603321

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Titolo	Handbook of smart antennas for RFID systems / / Nemai Chandra Karmakar
Pubbl/distr/stampa	Hoboken, New Jersey : , : Wiley, , c2010 [Piscataqay, New Jersey] : , : IEEE Xplore, , [2010]
ISBN	1-282-84904-2 9786612849046 1-118-07439-4 0-470-87217-9 0-470-87216-0
Edizione	[1st edition]
Descrizione fisica	1 online resource (646 p.)
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Disciplina	621.384135 681/.2
Soggetti	Radio frequency identification systems - Design and construction Adaptive antennas - Design and construction Phased array antennas - Design and construction
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 and index.
Nota di contenuto	Forward -- Preface -- Acknowledgement -- Section I: Introduction to RFID -- Chapter 1: The Evolution of RFID (B. Jamali, The University of Adelaide) -- Chapter 2: Introduction to RFID systems (S.M. Roy and N. C. Karmakar, Monash University) -- Chapter 3: Recent Paradigm Shift in RFID and Smart Antennas (N.C. Karmakar, Monash University) -- Section II: RFID Reader Systems -- Chapter 4: Modern RFID Readers (S. Parardovic and N.C. Karmakar, Monash University) -- Chapter 5: A Development Platform for SDR based RFID Reader (B. Jamali, The University of Adelaide) -- Section III: Physical Layer Developments of Smart Antennas for RFID Systems -- Chapter 6: RFID Reader Antenna -- A Smart Design Approach (S.M. Roy and N.C. Karmakar, Monash University) -- Chapter 7: Handheld Reader Antenna at 5.8 GHz (S.M. Roy and N.C. Karmakar, Monash University) -- Chapter 8: FPGA Controlled Phased Array Antenna Development for UHF RFID Reader (N. C. Karmakar, P. Zakavi and M. Kumbukage, Monash University) --

Chapter 9: Optically Controlled Phased Array Antennas for UWB RFID Reader (A. Arokiaswami, P. Q. Thai, Nanyang Technological University and N.C. Karmakar, Monash University) -- Chapter 10: Adaptive Antenna Arrays for RFID (M. Trinkle and B. Jamali, The University of Adelaide) -- Chapter 11: Design of Portable RFID Smart Antenna System?A Practical Approach (J.S. Fu, Chang Gung University, W. Liu, Nanyang Technological University and N.C. Karmakar, Monash University) -- Section IV: DOA and Localization of RFID Tags using Smart Antennas -- Chapter 12: Direction of Arrival Estimation based on A Single Port Smart Antenna for RFID Applications (Chen Sun, National Institute of Information and Communication Technology (NICT) and N. C. Karmakar, Monash University) -- Chapter 13: DOA Geo-location in Real-Time Indoor WiFi System Utilizing Smart Antennas (C.H. Lim, B.P. Ng, M.H. Er, J.P. Lie and W. Wang, Nanyang Technological University) -- Chapter 14: Direction of Arrival (DoA) Estimation of Impulse Radio UWB RFID Tags (J.P. Lie, B.P. Ng, C.H. Lim and C.M. S. See, Nanyang Technological University).
Chapter 15: Localization techniques in single and multihop wireless networks (V. Lakafosis, Rushi Vyas and M.M. Tentzeris, Georgia Institute of Technology) -- Section V: Multi-Antenna RFID Tags -- Chapter 16: Multi-antenna Chipless RFID Tags (I. Balbin and N. C. Karmakar, Monash University) -- Chapter 17: Link Budgets for Backscatter Radio Systems (J.D. Griffin and G.D. Durgin, Georgia Institute of Technology) -- Chapter 18: Fading Statistics for Multi-Antenna RF Tags (J.D. Griffin and G.D. Durgin, Georgia Institute of Technology) -- Section VI: MIMO Antennas for RFID Systems -- Chapter 19: Optimum Power Allocation in Multiple-Input-Multiple-Output (MIMO) Systems under Independent Rayleigh Fading (J.S. Fu, Chang Gung University, W. Liu, Nanyang Technological University and N. C. Karmakar, Monash University) -- Chapter 20: Low-cost and Compact RF-MIMO Transceivers (I. Santamaria, J. Via, V. Elvira, J. Ibanez, J. Perez, University of Cantabria -- R. Eickhoff, and U. Mayer, Dresden University of Technology) -- Chapter 21: Blind Channel Estimation in MIMO using Multi-carrier CDMA (A. Rahim, Monash University, K. M. Ahmed, Asian Institute of Technology and N. C. Karmakar, Monash University) -- Section VII: Anti-Collision Algorithm and Smart Antennas for RFID Systems -- Chapter 22: Anti-collision Algorithm and Smart Antennas for RFID Systems (Q. J. Teoh and N. C. Karmakar, Monash University) -- Chapter 23: RFID Anti-Collision Algorithms with Multi-Packet Reception (J. Lee, Hewlett-Packard Laboratories, T. Kwon, Seoul National University) -- Chapter 24: Anti-Collision of RFID tags using Capturing Effect (Q. J. Teoh and N. C. Karmakar, Monash University).

Sommario/riassunto

The first book to combine the two most important wireless technologiesThis is a single, comprehensive, timely reference on the smart antenna technologies applied to radio frequency identification (RFID). Smart antennas provide outstanding capacity improvement to the radio communication systems for RFID, an automatic identification method that uses devices called RFID tags (transponders). Featuring chapters by leading experts in both academia and industry, it explains the recent development of smart antennas for the RFID system, both in the physical layer development and the software algorithms and protocols, and covers the latest achievements in design and application.The beginning chapters provide a comprehensive overview of RFID and smart antennas, offering an in-depth description of terminologies and concepts. The work presented thereafter focuses on these seven main categories:. RFID reader architecture. Smart antenna physical layer development. RFID position location using electronically steerable parasitic array radiator (ESPAR). RFID multiple-input multiple-

output (MIMO) antenna system. Multi-antenna RFID tags. Anti-collision and throughput improvement. Ultra wideband (UWB) RFID direction of arrival (DOA) estimationTopics discussed include signal processing algorithms, hardware architectures, adaptive beamforming for RFID smart antennas, multiuser interference suppression in RFID tag reading, phased array antennas for RFID applications, and smart antennas in wireless systems. Also featured are market analysis and case studies of RFID smart antennas.This groundbreaking reference on smart antennas for RFID is intended for undergraduates and postgraduates studying/researching RFID and smart antenna wireless communication systems. It is also useful for industrial designers of RFID systems, as well as researchers and engineers working on RFID systems and smart antennas for wireless communications systems.