

1. Record Nr.	UNINA9910821271503321
Titolo	Wireless networks : from the physical layer to communication, computing, sensing, and control // edited by Giorgio Franceschetti and Sabatino Stornelli
Pubbl/distr/stampa	Boston, : Academic Press, c2006 Oxford ; ; Burlington, : Academic, 2006
ISBN	1-281-05051-2 9786611050511 0-08-048179-5
Edizione	[1st edition]
Descrizione fisica	1 online resource (359 p.)
Altri autori (Persone)	FranceschettiGiorgio StornelliSabatino
Disciplina	004.6/8
Soggetti	Wireless LANs Personal communication service systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Lectures presented in Capri, Italy, fall of 2004.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Wireless Networks; Copyright Page; Table of Contents; Foreword; Preface; About the Authors; Chapter 1 Wireless Networks and Their Context; 1.1 Introduction; 1.2 The Scenario; 1.3 The Players; 1.4 Concluding Remarks; Chapter 2 The Wireless Communications Physical Layer; 2.1 Historical Perspectives; 2.2 Digital Communication Basics; 2.2.1 Complex Baseband Representation of Bandpass Signals; 2.2.2 Digital Transmission; 2.2.3 Performance Metrics for Digital Communication; 2.2.4 Some Limits on Performance of Digital Communication Systems; 2.2.5 Optimum Demodulation; 2.2.6 Discussion 2.3 Orthogonal Modulations2.3.1 Orthogonal Frequency Division Multiplexing; 2.3.2 Orthogonal Code Division Multiplexing; 2.3.3 Binary Stream Modulation; 2.3.4 Orthogonal Modulations with Memory; 2.4 Propagation in Wireless Channels; 2.4.1 Free Space Propagation; 2.4.2 Multipath Propagation; 2.4.3 Gaussian Modeling of Multipath Channels; 2.5 The Selectivity of Wireless Channels; 2.5.1 Frequency Selectivity; 2.5.2 Spatial Selectivity; 2.5.3 Time Selectivity; 2.5.4 Summary of

Channel Characteristics; 2.6 Physical Models of Wireless Systems; 2.6.1 Time-Flat Frequency-Flat (TF/FF) Channels 2.6.2 Time-Varying Frequency-Flat (TV/FF) Channels 2.6.3 Time-Flat Frequency-Varying (TF/FV) Channels; 2.6.4 Receiver-Space-Varying Frequency-Flat (RSV/FF) Channels; 2.6.5 Transmitter-Receiver Space-Varying Frequency-Flat (TRSV/FF) Channels; 2.6.6 Paradigms for Wireless Communication; 2.7 Modern Wireless Communication; 2.7.1 Capacity of the SISO Channel; 2.7.2 Capacity of the SISO Varying Channel; 2.7.3 Capacity of the RSV/TF/FF Channel; 2.7.4 MIMO Capacity; 2.8 Conclusion; References; Chapter 3 Handset Communication Antennas, Including Human Interactions; 3.1 Introduction 3.1.1 Mobile Communication Systems 3.1.2 Antenna Designs for Handsets; 3.1.3 Interaction with the Human; 3.1.4 Objectives of this Chapter; 3.2 Overview of Popular Handset Antennas; 3.2.1 RF System Introduction; 3.2.2 External Antennas; 3.2.3 Internal Antennas; 3.2.4 Non-Cellular Antennas; 3.2.5 Key Electrical Parameters in Handset Antenna Designs; 3.3 Integration of Multiple Antennas; 3.3.1 Dual-Band PIFA Design; 3.3.2 PIFA and Whip Antenna Combination; 3.3.3 PIFA and GPS IFA Combination; 3.4 Human Interaction in Handset Antenna Design; 3.4.1 Human Head Effect on Handset Antennas 3.4.2 SAR Consideration in Handset Antenna Designs 3.4.3 SAR Reduction with a GPS IFA; 3.5 Total Radiated Power (TRP); 3.5.1 Definition of TRP; 3.5.2 PIFA Models in the 1900MHz Band; 3.5.3 SAR and TRP; 3.6 Conclusion; References; Chapter 4 Wireless Channel Model; 4.1 Introduction; 4.1.1 The Deterministic Approach; 4.1.2 The Stochastic Approach; 4.2 The Deterministic Geometrical Model (DGM); 4.2.1 Input Data; 4.2.2 Output Data; 4.2.3 Rays Propagation, Reflection, and Diffraction; 4.2.4 Results; 4.3 The Stochastic Environment Model; 4.3.1 The Large-Scatterers Model (SELM) 4.3.2 The Small-Scatterers Model (SESM)

Sommario/riassunto

Awarded by the International Calabria's Prize! This multidisciplinary volume originates from lectures presented at a short course on wireless communications in Capri, Italy. This globally attended conference has produced an exceptional book written by pioneers in the field. Lecturers at Capri included pillars in the fields of electromagnetics, communications, information technology and mathematics. As communications technology becomes increasingly wireless, an interdisciplinary viewpoint is necessary for professionals to correct problems and avoid others before they occur.<br
