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| Nota di contenuto | Contents; Foreword; Robert Calderbank; Preface; Why we wrote this book; Who will benefit from this book?; Acknowledgments; Notation; Variables; Functions; Abbreviations; General; LTE-specific; 1 Introduction; 1.1 Evolution towards mobile broadband communications; 1.2 System design principles of wireless communications; 1.3 Why OFDMA for mobile broadband?; 1.4 Systems approach and outline of the book; 2 Elements of OFDMA; 2.1 OFDM; 2.1.1 Tone signals; 2.1.2 Cyclic prefix; 2.1.3 Time-frequency resource; 2.1.4 Block signal processing; 2.2 From OFDM to OFDMA; 2.2.1 Basic principles 2.2.2 Comparison: OFDMA, CDMA, and FDMA2.2.3 Inter-cell interference averaging: OFDMA versus CDMA; 2.2.4 Tone hopping: averaging versus peaking; 2.2.5 Time-frequency synchronization and control; 2.2.6 Block signal processing; 2.3 Peak-to-average power ratio |

Sommario/riassunto

Written by the pioneers of Flash-OFDM, arguably the first commercially developed OFDMA-based mobile broadband system in the world, this book teaches OFDMA from first principles, enabling readers to understand mobile broadband as a whole. The book examines the key requirements for data-centric mobile; how OFDMA fits well with data networks; why mobile broadband needs to be IP-based; and how to bridge communications theory to real-world air interface design and make a good system choice between performance and complexity. It also explores the future of wireless technologies beyond conventional cellular architecture. One of the key challenges faced by newcomers to this field is how to apply the wireless communications theory and principles to the real world and how to understand sophisticated commercial systems such as LTE. The authors use their firsthand experience to help graduate students, researchers and professionals working on 4G to bridge the gap between theory and practice.