

1. Record Nr.	UNINA9910144382103321
Autore	Chiueh Tzi-Dar <1960->
Titolo	OFDM baseband receiver design for wireless communications [[electronic resource] /] / Tzi-Dar Chiueh, Pei-Yun Tsai
Pubbl/distr/stampa	Singapore ; ; Hoboken, NJ, : John Wiley and Sons (Asia), c2007
ISBN	1-282-37130-4 9786612371301 0-470-82250-3 0-470-82248-1
Edizione	[1st edition]
Descrizione fisica	1 online resource (278 p.)
Altri autori (Persone)	TsaiPei-Yun
Disciplina	621.384
Soggetti	Wireless communication systems Electronic books.
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	OFDM Baseband Receiver Design for Wireless Communications; Contents; Preface; About the Authors; Acknowledgements; 1 Introduction; 1.1 Wireless Communication Systems; 1.1.1 Digital Broadcasting Systems; 1.1.2 Mobile Cellular Systems; 1.1.3 Wireless Network Systems; Bibliography; 2 Digital Modulation; 2.1 Single-Carrier Modulation; 2.1.1 Power Spectral Densities of Modulation Signals; 2.1.2 PSK, QAM and ASK; 2.1.3 CPFSK and MSK; 2.1.4 Pulse Shaping and Windowing; 2.2 Multi-Carrier Modulation; 2.2.1 Orthogonal Frequency- Division Multiplexing; 2.2.2 OFDM-Related Issues 2.2.3 OFDM Transceiver Architecture2.2.4 OFDM System Examples; Bibliography; 3 Multiple Access and Error-Correcting Codes; 3.1 Multiple Access; 3.1.1 Frequency-Division Multiple Access (FDMA); 3.1.2 Time-Division Multiple Access (TDMA); 3.1.3 Code-Division Multiple Access (CDMA); 3.1.4 Carrier Sense Multiple Access (CSMA); 3.2 Spread Spectrum and CDMA; 3.2.1 PN Codes; 3.2.2 Direct- Sequence Spread Spectrum; 3.2.3 Frequency-Hopping Spread Spectrum; 3.3 Error-Correcting Codes; 3.3.1 Block Codes; 3.3.2 Reed- Solomon Codes; 3.3.3 Convolutional Codes; 3.3.4 Low-Density Parity- Check Codes

Bibliography
4 Signal Propagation and Channel Model; 4.1 Introduction; 4.2 Wireless Channel Propagation; 4.2.1 Path Loss and Shadowing; 4.2.2 Multipath Fading; 4.2.3 Multipath Channel Parameters; 4.3 Front-End Electronics Effects; 4.3.1 Carrier Frequency Offset; 4.3.2 Sampling Clock Offset; 4.3.3 Phase Noise; 4.3.4 IQ Imbalance and DC Offset; 4.3.5 Power Amplifier Nonlinearity; 4.4 Channel Model; 4.4.1 Model for Front-End Impairments; 4.4.2 Multipath Rayleigh Fader Model; 4.4.3 Channel Models Used in Standards; Bibliography; 5 Synchronization; 5.1 Introduction; 5.2 Synchronization Issues
5.2.1 Synchronization Errors
5.2.2 Effects of Synchronization Errors; 5.2.3 Consideration for Estimation and Compensation; 5.3 Detection/Estimation of Synchronization Errors; 5.3.1 Symbol Timing Detection; 5.3.2 Carrier Frequency Offset Estimation; 5.3.3 Residual CFO and SCO Estimation; 5.3.4 Carrier Phase Estimation; 5.4 Recovery of Synchronization Errors; 5.4.1 Carrier Frequency Offset Compensation; 5.4.2 Sampling Clock Offset Compensation; Bibliography; 6 Channel Estimation and Equalization; 6.1 Introduction; 6.2 Pilot Pattern; 6.3 Pilot-Based Channel Estimation
6.3.1 Channel Estimation by Block-Type Pilot Symbols
6.3.2 Channel Estimation by Comb-Type Pilot Symbols; 6.3.3 Channel Estimation by Grid-Type Pilot Symbols; 6.4 Adaptive Channel Estimation; 6.5 Equalization; 6.5.1 One-Tap Equalizer; 6.5.2 Multiple-Tap Equalizer; Bibliography; 7 MIMO Techniques; 7.1 Introduction; 7.2 MIMO Basics; 7.2.1 Capacity; 7.2.2 Diversity; 7.3 MIMO-OFDM; 7.3.1 MIMO Pilot Pattern; 7.3.2 MIMO-OFDM Synchronization; 7.3.3 MIMO-OFDM Channel Estimation; 7.4 MIMO Encoding and Detection; 7.4.1 Space Block Codes; 7.4.2 Spatial Multiplexing; 7.4.3 Spatial De-correlation
Bibliography

Sommario/riassunto

Orthogonal frequency-division multiplexing (OFDM) access schemes are becoming more prevalent among cellular and wireless broadband systems, accelerating the need for smaller, more energy efficient receiver solutions. Up to now the majority of OFDM texts have dealt with signal processing aspects. To address the current gap in OFDM integrated circuit (IC) instruction, Chiueh and Tsai have produced this timely text on baseband design. OFDM Baseband Receiver Design for Wireless Communications covers the gamut of OFDM technology, from theories and algorithms to architectures and circuits.
