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Nota di contenuto	About the Authors. -- Other Wiley and IEEE Press Books on Related Topics. -- Acknowledgments. -- 1. Introduction. -- I OFDM System Design. -- 2. Introduction to OFDM. -- 3. OFDM Transmission over Gaussian Channels. -- 4. OFDM Transmission over Wideband Channels. -- 5. Time and Frequency Domain Synchronisation. -- 6. Adaptive Single- and Multi-User OFDM. -- 7. Block-Coded Adaptive OFDM. -- II OFDM versus MC-CDMA Systems, Their Spreading Codes and Peak Factor Reduction. -- 8. OFDM versus MC-CDMA. -- 9. Basic Spreading Sequences. -- 10. MC-CDMA Performance in Synchronous Environments. -- 11. Advanced Peak Factor Reduction Techniques. -- 12. Adaptive Modulation for OFDM and MC-CDMA. -- 13. Successive Partial Despreading Based Multi-Code MC-CDMA. -- III Advanced

Topics: Channel Estimation and Multi-user OFDM Systems. -- List of General Symbols. -- 14. Pilot-Assisted Channel Estimation for Single-User OFDM. -- 15. Decision-Directed Channel Estimation for Single-User OFDM. -- 16. Channel Estimation for Multi-User OFDM. -- 17. Detection Techniques for Multi-User SDMA-OFDM. -- 18. OFDM-Based Wireless Video System Design. -- 19. Conclusion and Further Research Problems. -- Glossary. -- Bibliography. -- Subject Index. -- Author Index.

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## Sommario/riassunto

OFDM systems have experienced increased attention in recent years and have found applications in a number of diverse areas including telephone-line based ADSL links, digital audio and video broadcasting systems, and wireless local area networks. OFDM is being considered for the next-generation of wireless systems both with and without direct sequence spreading and the resultant spreading-based multi-carrier CDMA systems have numerous attractive properties. This volume provides the reader with a broad overview of the research on OFDM systems during their 40-year history. Part I commences with an easy to read conceptual, rather than mathematical, treatment of the basic design issues of OFDM systems. The discussions gradually deepen to include adaptive single and multi-user OFDM systems invoking adaptive turbo coding. Part II introduces the taxonomy of multi-carrier CDMA systems and deals with the design of their spreading codes and the objective of minimising their crest factors. This part also compares the benefits of adaptive modulation and space-time coding with the conclusion that in conjunction with multiple transmitters and receivers the advantages of adaptive modulation gradually erode both in OFDM and MC-CDMA systems. Part III addresses a host of advanced channel estimation and multi-user detection problems in the context of Space Division Multiple Access (SDMA) systems. Aimed at the mathematically advanced reader, this part provides a range of implementation-ready solutions, performance results and future research issues. Researchers, advanced students and practising engineers working in wireless communications will all find this valuable text illuminating and informative.

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