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speed digital networks. The enormous bandwidth available, the potential for high data rates, and the promise for small size and low processing power with reduced implementation cost all present a unique opportunity for UWB to become a widely adopted radio solution for future wireless home networking technology. Ultra-Wideband Communications Systems is the first book to provide comprehensive coverage of the fundamental and advanced issues related to UWB technology, with a particular focus on multiband orthogonal frequency division multiplexing (multiband OFDM). The multiband OFDM approach was a leading method in the IEEE 802.15.3 standard and has recently been standardized by ECMA International. The book also explores several major advanced state-of-the-art technologies to enhance the performance of the standardized multiband OFDM approach. Additional coverage includes: * Characteristics of UWB channels * An overview of UWB single-band and multiband OFDM approaches * MIMO multiband OFDM * Performance characterization * Performance under practical considerations * Differential multiband OFDM * Power-controlled channel allocation * Cooperative UWB multiband OFDM Complete with pointers for future research opportunities to enhance the performance of UWB multiband OFDM technology over current and future wireless networks, this is an indispensable resource for graduate students, engineers, and academic and industrial researchers involved with UWB.
