Abstracts

Orthogonal frequency-division multiplexing in wireless communication systems with multimode fiber feeds

B.J. Dixon, R.D. Pollard and S. Iezekiel. "Orthogonal frequency-division multiplexing in wireless communication systems with multimode fiber feeds." 2001 Transactions on Microwave Theory and Techniques 49.8 (Aug. 2001 [T-MTT] (Mini-Special Issue on the 2000 IEEE Radio and Wireless Conference (RAWCON))): 1404-1409.

The feasibility of using multimode fiber as an inexpensive cell feed in broad-band indoor picocellular systems is investigated in this paper. The performance of coded orthogonal frequency-division multiplexing (OFDM) for a variety of multimode fiber profiles, including stepped index and /spl alpha/-profile graded index fibers, is assessed. In addition to its ability to perform well in a frequency-selective multipath environment, OFDM is shown to offer good protection against the frequency selectivity of a dispersive multimode fiber. Data rates in excess of 100 Mb/s (without equalization) over a multimode fiber channel are possible, whereas they may be limited to some 20-30 Mb/s using conventional ASK modulation.

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