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Abstract:

In a combination tutorial and research paper, spread-spectrum techniques for combating the effects of multipath on high-rate data transmissions via radio are explored. The tutorial aspect of the paper presents: 1) a heuristic outline of the theory of spread-spectrum antimultipath radio receivers and 2) a summary of a statistical model of urban/suburban multipath. The research section of the paper presents results of analyses and simulations of various candidate receivers indicated by the theory, as they perform through urban/suburban multipath. A major result shows that megabit-per-second rates through urban multipath (which typically lasts up to 5 μ s) are quite feasible.

Published in: Proceedings of the IEEE (Volume: 68, Issue: 3, March 1980)

Page(s): 328 - 353

DOI: 10.1109/PROC.1980.11645

Date of Publication: March 1980

Publisher: IEEE

ISSN Information:

Sponsored by: IEEE

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Spread spectrum communication, Digital communication, Bandwidth, Delay, Receivers, Computational modeling, Analytical models, Performance analysis, Computer simulation, Mathematical model

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