

Using MC-CDMA technique to eliminate multi-user interference MUI

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Abstract: This study focuses on the use of Multiple Carrier - Code Division Multiple Access (MC-CDMA) technique to improve transmission performance in mobile networks. The research context is motivated by the problem of multiple access interference (MUI), which significantly affects service quality in multi-user systems. The objective of the study is to develop and test an MC-CDMA solution that can minimize MUI and enhance frequency utilization efficiency. The approach includes system modeling, theoretical analysis, and experiments on a digital signal processing (DSP) hardware-software platform. The expected results hold significant practical value for the mobile industry and contribute to the scientific understanding of frequency management.

Keywords: MC-CDMA, MUI interference, mobile system, multi-user transmission, digital testing