Abstract

In This Work we propose a Bi-level frequency hopping code-division multiple-access (FH-CDMA) scheme for wireless communication system over fading channel. A novel method provides flexibility in the range of modulation codes and FH patterns. By separating the modulation codes bi-level scheme can be modified to carry more possible users without increasing the number of FH patterns. The performance and spectral efficiency of the scheme are examined. The simulation result shows that the divided bi-level FH-CDMA scheme supports higher data rate and greater spectral efficiency than Goodman's frequency-shift-keying FH-CDMA scheme. The performance of Bi-level FH-CDMA scheme over additive white Gaussian noise (AWGN), Rayleigh, Rican and Extended Typical Urban (ETU) channel are analyzed. Therefore our Bi-level FH-CDMA scheme is more flexible in the selection of the modulation codes and FH patterns in order to meet different system operating requirements.

References

- Sung-Ming Wu, Guu-Chang Yang, and Cheng-Yuan Chang, and Wing C. Kwong
Wireless Communication Systems over Fading Channels using Bi-Level FH-CDMA Method


Index Terms

Computer Science  Communications

Keywords

Code Division Multiple Access  Modulation Codes  Frequency Hopping  Spectral Efficiency.