

论文

钟控序列用作A-CDMA系统扩频码的研究

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摘要

该文提出将钟控序列作为A-CDMA系统的一种新的和有潜在优势的扩频码。首先, 基于一个A-CDMA模型, 建立了平均误码率与PN(Pseudo Noise)序列互相关参数之间的关系。提出了PN序列用作A-CDMA扩频码应该具备的条件。接着, 分析了钟控序列用作A-CDMA系统扩频码的可行性。最后, 数值结果比较了m序列和钟控序列的互相关特性以及它们对应的平均误码率。在同时工作的用户数不多于75的情况下, 证实了钟控序列作为扩频码的可行性。

关键词 [A-CDMA](#) [钟控序列](#) [互相关](#) [平均误码率](#)

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A CLASS OF CLOCK-CONTROLLED SPREADING SEQUENCES FOR A-CDMA SYSTEMS

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Abstract

In this paper, the clock-controlled sequence is presented as a potentially superior spreading code for A-CDMA systems. First, on the basis of an A-CDMA system model, the relationship between the average bit error probability and the cross-correlation parameters of the PN (Pseudo Noise) sequences is established. The conditions, which the PN sequences as spreading codes should satisfy, are derived from the above relationship. Next, the feasibility of the clock-controlled sequences as the spreading codes for an A-CDMA system are analyzed systematically. Finally, the cross-correlation functions between m-sequence and clock-controlled sequence, as well as the average bit error probability (BEP) corresponding to both sequences under various user number, are compared in numerical results. The feasibility of the clock-controlled sequences as spreading codes is thus verified when $U < 75$.

Key words [A-CDMA](#) [Clock-controlled sequence](#) [Cross-correlation](#) [Probability of bit error](#)

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