电子与信息学报 2006 28 (7): 1266-1269 ISSN: 1009-5896 CN: 11-4494/TN

论文

短波宽带OFDM的相对门限干扰消除器

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收稿日期 2004-11-22 修回日期 2005-9-7 网络版发布日期 2007-11-29 接受日期

摘要
短波宽带OFDM系统极容易受到拥挤频段上的窄带干扰，低信噪比工作条件下可能带来性能的急剧恶化。该文在Nilsson的宽带OFDM系统基础上设计了一种适合短波多径信道的相对门限干扰消除器。分析了低信噪比下相对门限的选取和噪声功率的估计问题，并对信道补偿做了改进，以减小噪声干扰。理论分析和仿真表明，低信噪比下，这种门限干扰消除器可以使系统在有干扰的条件下性能接近于理想干扰消除器的性能。

关键词 正交频分复用(OFDM) 相对门限干扰消除器 窄带干扰 m序列 低信噪比

分类号 TN919.3

A Relative Threshold Exciser of Narrowband Interference for Wideband OFDM in HF Communications

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Abstract
Wideband OFDM communications are easily been interfered by narrowband signal. The attenuation is worse in low SNR. Based on Nilsson's wideband OFDM system, a relative threshold exciser for narrowband interference is designed here. The choice of relative threshold and the power estimation of noise are investigated under low SNR. To reduce noise interference, the method of channel compensation is modified for noisy environment. Theoretic analysis and simulations show the performance of the system with this relative threshold exciser can keep up with the ideal interference exciser in HF communications under low SNR.

Key words OFDM Relative threshold exciser Narrowband interference m sequence Low signal noise ratio

DOI:

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