超寬頻系統中使用跳時脈波振幅調變之多用戶檢測器及盲蔽式信號接收

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摘 要

本篇論文以跳時（time-hopping）雙極性（antipodal）脈波振幅調變（PAM）之超寬頻（UWB）脈衝無線電（IR）系統為架構。主要分成多用戶檢測器及盲蔽式接收兩部份。過去對於目標信號均依賴嚴密的功率控制及使用單一用戶檢測（match filtering）。在此我們提出在多重路徑衰減情形下能擷取出資訊位元同時消除多用戶干擾（MAI）之一系列線性多用戶檢測器。其次，我們提出兩種低複雜度的行動台（MS）接收機。其中一種是根據RAKE scheme，另一種則是設計成滿足最小輸出功率（minimum output energy, MOE）。然而，精確的通道訊息對於確實運算是重要的，因此我們提出一種盲蔽式（blind）通道估計器。而經由分析及模擬結果，證明了不僅能有效抑制多用戶干擾及遠近問題（near-far）且系統效能被充分的改善。

關鍵詞 : 超寬頻 ; 跳時 ; 線性多用戶檢測器 ; 多用戶干擾 ; 盲蔽式估計 ; 最小輸出功率

目錄

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