

工程与应用

改进的RFID二进制搜索防碰撞算法

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摘要 标签冲突是射频识别技术(RFID)不可避免的问题,在ABS算法和动态调整二进制搜索算法的基础上提出了一种改进的二进制搜索算法,该算法简化了阅读器发送的指令和冲突检测过程,并采用动态方式传输EPC数据。仿真结果表明,相比于目前的二进制搜索算法,这种算法能极大地减少阅读器与标签之间的通信量,有效地提高标签的识别速度,具有良好的应用前景。

关键词 [射频识别技术](#) [防碰撞算法](#) [二进制搜索](#) [Manchester编码](#)

分类号

Improved RFID binary search anti-collision algorithm

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Abstract

Tags collision is an unavoidable problem in RFID. This paper proposes an improved binary-tree anti-collision algorithm for Radio Frequency Identification system. The proposed algorithm combines the advantages of ABS (Adaptive Binary Splitting) algorithm and dynamic adjustment binary-tree algorithm, simplifies reader sent instructions and conflict detection process. Furthermore, the EPC data is transmitted dynamically. The performance of the proposed algorithm is simulated and compared with other binary-tree anti-collision algorithms. The simulated results show that the proposed algorithm can greatly reduced the number of bits transferred between the reader and the tags and get much better performance for identifying a large amount of tags. Therefore the application has good prospects.

Key words [Radio Frequency Identification \(RFID\)](#) [anti-collision algorithm](#) [binary search](#) [Manchester](#)

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