自适应维分编码**RFID**防碰撞算法研究及优化

Optimization and research on RFID anti-collision algorithmbased on adaptive multi-dimension division code

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中文摘要：

　　首先提出MDDC（multi-dimension division code）维分编码的算法。该算法在阅读器范围内标签碰撞较多时，阅读器呼叫每个标签的平均次数　趋近4/3，呼叫每个标签所传输的数据量趋近于一个较小的常数。MDDC维分编码算法在碰撞次数较少时的平均呼叫次数、平均发送数据量相对较大，又提出自适应MDDC维分编码及其优化算法。阅读器根据范围内的标签数目自适应地降低维分编码的维数并对标签重新编码，大大降低了搜素较少标签时的平均呼叫次数和平均数据量。因此，自适应MDDC维分编码及优化算法无论在标签较多碰撞和较少碰撞时，都能很好地提高搜索的效率。

英文摘要：

　　Under the circumstance of many tags and many collisions, when multi-dimension division code algorithm is applied, the average number of times the reader calls each tag approximated to a limit 4/3, and the data conveyed by calling each tag tends to be a relatively small constant. However, under the circumstance of few collisions, the average number of times the reader calls each tag and the average data conveyed were relatively large. The adaptive multi-dimension division code algorithm, and the optimization of adaptive multi-dimension division code algorithm were proposed. The adaptive multi-dimension division code algorithm could adaptively decrease the MDDC dimensions according to the numbers of tags, and encode the tags again, hence greatly decrease the average number of times the reader calls each tag even under the circumstance of few tags. Therefore, in RFID system, adaptive multi-dimension division code algorithm can significantly improve the efficiency of searching for tags no matter in many collisions or in few collisions.

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