Abstract

Passive UHF RFID systems using Dynamic Frame-Slotted ALOHA (DFSA) adjust the frame size according to the number of tags, but frame size N is equals to $2^Q$ and cannot be adjusted exactly to the number of tags to be identified. In this paper, we proposed a new Aloha based anti-collision algorithm which divides the tags and adjusts the frame sizes in such a manner as to always keep the system efficiency optimal. The algorithm is also designed in order to reduce the identification time for identifying the total number of tags. As a result the proposed algorithm uses minimum number of slots to read the tags with minimum identification time. Simulation results show that the algorithm gives maximum slot efficiency with every frame maintaining the system efficiency close or equal to 36.8% compared to other anti collision algorithms.

References

Dynamic Grouping Frame-slotted Aloha

- Harald vogt-.Efficient object identification with passive RFID tags. In international conference on pervasive computing,LNCS.Springer-Verlag,2002

Index Terms

Computer Science Communications

Keywords

Passive UHF RFID Anti-collision EPC class 1 Gen 2 grouping approach maximum system efficiency