IMPLEMENTATION OF HIGH PERFORMANCE ANTI-COLLISION TECHNIQUE FOR RFID UHF TAG

A project report submitted to Jawaharlal Nehru Technological University, Kakinada in the partial fulfillment of the requirements for the award of degree of

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In

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CERTIFICATE

This is to certify that the project work entitled **"IMPLEMENTATION OF HIGH PERFORMANCE ANTI-COLLISION TECNIQUE FOR RFID UHF TAG"** is being submitted for the partial fulfillment of requirements for the award of Bachelor of Technology in Electronics & Communication Engineering, is a bonafide work done by **D.ATCHUTA RAO (14811A0411), I.PRIYANAKA(14811A0422), R.PRASANNA TULASI DURGA(14811A0456), K.V.V.S.RAHUL(14811A0437)** under my guidance during year 2014 – 2018 and it has been found suitable for acceptance according to the requirements of the University.

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ABSTRACT

The Radio Frequency Identification (RFID) system is an automatic identification technology of choice over other existing technologies. Nowadays, the ability to identify many objects simultaneously is crucial for more advanced applications such as to identify objects in the warehouse and at the supermarket. These applications require an efficient identification technique which can identify many objects at one time without long delay. Meanwhile, one of the main issues during the identification process is the tags collision which occurs when all these tags are simultaneously responding to the reader commands. An RFID system consists of a Tag, which is made up of a microchip with an Antenna, and an interrogator or reader with an Antenna. The reader sends out Electromagnetic Waves.

The RFID applications also require the tag to be simple, small, cheap and memory less. Therefore the research is to evaluate the performance of the proposed tag architecture for the Fast Detection Anti-collision Algorithm. The Anti-collision technique system is classified into two subsystems. One is Pre and another one is Post. By using Pre we have to detect the errors from incoming messages. And using Post we identify the tag. Subsequently the tags are killed in order to avoid the collision.

In the proposed method we are using CRC checker to eliminate the multiple errors and fast search algorithm to avoid collision of multiple tags. We have implemented fast search algorithm to identify thirty two tags at a time by using binary tree and CRC check for efficiency. This algorithm is simulated and synthesized using Xilinx ISE 14.2.