

Protecting RFID Tags from Power Analysis (Yeda)

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Adi Shamir, Mathematics and Computer Science, Computer Science and Applied Mathematics

Summary

A cheap and effective solution for protecting RFID tags from power attacks. RFID tags are secure tags present in many applications (e.g. secure passports). They are poised to become the most far-reaching wireless technology since the cell phone, with worldwide revenues expected to reach \$2.8 billion in 2009. RFID tags were believed to be immune to power analysis attacks since they have no direct connection to an external power supply. However, recent research has shown that they are vulnerable to such attacks, since it is possible to measure their power consumption without actually needing either tag or reader to be physically touched by the attacker. Furthermore, this attack may be carried out even if no data is being transmitted between the tag and the attacker, making the attack very hard to detect. The current invention overcomes these problems by a slight modification of the tag's electronic system, so that it will not be vulnerable to power analysis.

Applications

Improved security of RFID tags.

Advantages


Simple and cost-effective

The design involves changes only to the RF front-end of the tag, making it the quickest to roll-out

Technology's Essence

An RFID system consists of a high-powered reader communicating with a tag using a wireless medium. The reader generates a powerful electromagnetic field around itself and the tag responds to this field. In passive systems, placing a tag inside the reader's field also provides it with the power it needs to operate. According to the inventive concept, the power consumption of the computational element is detached from the power supply of the tag. Thus, the present invention can almost eliminate the power consumption information.

Contact for more information:

Adi Shamir , Licensing Officer, +972-8-9344564

Yeda Research and Development Co. Ltd. - Technology Transfer from the Weizmann Institute. P.O. Box 95, Rehovot, 76100, Israel. Tel: +972-8-947-0617