

Battery powered tags for ISO/IEC 14443, actively emulating load modulation

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Summary

Originally designed for contactless smart cards in the form factor ID1, today ISO/IEC 14443 finds new applications in an increasing number of different form factors. Most famous among the new form factors are applications such as the electronic passport (e-passport) or contactless credit cards in a form factor that is only half or one third as large ("key fob") as ID1. The need of increasingly smaller form factors however, more often leads to problems in the field, because the small transponder cannot always be read out reliably. It becomes a real problem, when the contactless data carriers are miniaturized even further, to be operated inside a mobile phone as a micro-SD or SIM card. With a passive transponder, a reliable communication with the reader can not be guaranteed any more. A proposal for a new work item in the standardization of contactless smartcards (ISO/IEC 14443), which describes the use of battery-assisted transponders, will be a helpful new approach to overcome such limitations. The following article describes the basic principle behind this new type of transponder.