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**Information technology — Radio
frequency identification for item
management —**

Part 1:
**Interference rejection performance
test method between a tag as
defined in ISO/IEC 18000-63 and a
heterogeneous wireless system**



Reference number
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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 31, *Automatic identification and data capture techniques*.

A list of all parts in the ISO/IEC 23200 series can be found on the ISO and IEC websites.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

Introduction

This document provides test procedures and method to evaluate the impact on tag as defined in ISO/IEC 18000-63 of interference generated by other wireless systems. The interference rejection test method of this document is different to ISO/IEC 18046-3:2012, 8.8. This document covers interference effect between the tags and heterogeneous wireless system, while ISO/IEC 18046-3 covers interference effect between tags and homogeneous wireless systems.

Ultra-high-frequency (UHF) radio frequency identification (RFID) is a wireless technology that connects billions of everyday items to the Internet of Things (IoT), enabling consumers and businesses to identify, locate, authenticate, and engage each item. IoT applications require a data connection between the physical and digital world, and UHF RFID is the ideal technology to bridge these realms with the ability to bring low cost, unique identification to everyday items. Low-power wide-area networks (LPWAN) operate at long read ranges of 2 km to 3 km. While LoRaWAN devices have a very slow data-transfer rate, they are useful for transmitting sensor data. For example, LoRaWAN, WiFi-Halow (802.11ah), Sigfox, NB-IoT, WB-IoT, and LTE-M are representative technologies.

The frequencies used by LoRaWAN systems differ by region and country, as do the frequency bands designated for UHF RFID systems. In particular, LoRaWAN and RFID systems use different power levels and heterogeneous protocols in shared frequency bands. They are susceptible to interference generated by other wireless systems. This harsh signal propagation environment combined with interference from coexisting wireless technologies can lead to a degradation of the performance or even application failures. To evaluate possible interference on UHF RFID systems, industrial stakeholders make a constructive discussion on how to overcome interference problems.

Information technology — Radio frequency identification for item management —

Part 1:

Interference rejection performance test method between a tag as defined in ISO/IEC 18000-63 and a heterogeneous wireless system

1 Scope

This document defines a test method to evaluate the interference rejection performance of tags covered by ISO/IEC 18000-63 and a heterogeneous wireless system using different access technologies, e.g. radio frequency identification and cell phone network.

It specifies the general requirements and test requirements.

The test method in this document makes it possible to compare the relative interference rejection performance among tags under a single wireless interference environment. In addition, this document can be used in a benchmarking test according to requirements in a given application or service.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 19762, *Information technology — Automatic identification and data capture (AIDC) techniques — Harmonized vocabulary*