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Information technology — Radio frequency identification for item management

Part 2: Interference rejection performance test method between an Interrogator as defined in ISO/IEC 18000-63 and a heterogeneous wireless system

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National foreword

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Introduction

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 (LoRaWAN) 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 systems performance or even application failures.

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