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

**Part 6:
Parameters for air interface
communications at 860 MHz to 960 MHz**

iTeh STANDARD PREVIEW

*Technologies de l'information — Identification par radiofréquence
(RFID) pour la gestion d'objets —*

*Partie 6: Paramètres de communications d'une interface d'air entre
860 MHz et 960 MHz*

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Foreword

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The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

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ISO/IEC 18000-6 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 31, *Automatic identification and data capture techniques*.

This second edition cancels and replaces the first edition (ISO/IEC 18000-6:2004), which has been technically revised. It also incorporates the Amendment ISO/IEC 18000-6:2004/Amd.1:2006.

ISO/IEC 18000 consists of the following parts, under the general title *Information technology — Radio frequency identification for item management*:

- *Part 1: Reference architecture and definition of parameters to be standardized*
- *Part 2: Parameters for air interface communications below 135 kHz*
- *Part 3: Parameters for air interface communications at 13,56 MHz*
- *Part 4: Parameters for air interface communications at 2,45 GHz*
- *Part 6: Parameters for air interface communications at 860 MHz to 960 MHz*
- *Part 7: Parameters for active air interface communications at 433 MHz*

Introduction

This part of ISO/IEC 18000 describes a passive backscatter radio frequency identification (RFID) system that supports the following system capabilities:

- identification and communication with multiple tags in the field;
- selection of a subgroup of tags for identification or with which to communicate;
- reading from and writing to or rewriting data many times to individual tags;
- user-controlled permanently lockable memory;
- data integrity protection;
- Interrogator-to-tag communications link with error detection;
- tag-to-Interrogator communications link with error detection;
- support for both passive back-scatter tags with or without batteries.

This part of ISO/IEC 18000 specifies the physical and logical requirements for a passive-backscatter, RFID system operating in the 860 MHz to 960 MHz frequency range. The system comprises Interrogators, also known as readers, and tags, also known as labels.

An Interrogator transmits information to a tag by modulating an RF signal in the 860 MHz to 960 MHz frequency range. The tag receives both information and operating energy from this RF signal. Passive tags are those which receive all of their operating energy from the Interrogator's RF waveform. If tags maintain a battery then they may operate using some passive principles; however, they do not necessarily get all their operating energy from the Interrogator's RF waveform.

An Interrogator receives information from a tag by transmitting a continuous-wave (CW) RF signal to the tag; the tag responds by modulating the reflection coefficient of its antenna, thereby backscattering an information signal to the Interrogator. The system is Interrogator-Talks-First (ITF) for Types A, B and C, meaning that a tag modulates its antenna reflection coefficient with an information signal only after being directed to do so by an Interrogator.

Interrogators and tags are not required to talk simultaneously; rather, communications are half-duplex, meaning that Interrogators talk and tags listen, or vice versa.

This part of ISO/IEC 18000 further contains an optional "tag only talks after listening" Type D, an enhanced Tag Talks Only (TTO) technique. Type D uses Pulse-Position Encoding (PPE) or Miller encoding in the return link and does not define a dedicated forward link. In fact, tags may implement one of the types defined in this part of ISO/IEC 18000 (A, B, or C) besides Type D in order to allow enhanced tag access techniques.

The International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) draw attention to the fact that it is claimed that compliance with this document may involve the use of patents concerning radio frequency identification technology.

ISO and IEC take no position concerning the evidence, validity and scope of these patent rights.

The holders of these patent rights have assured ISO and IEC that they are willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statements of the holders of these patent rights are registered with ISO and IEC.

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