International Standard

ISO 11785

Radio frequency identification of animals — Technical concept

Identification des animaux par radiofréquence — Concept technique

Second edition
2026-03

Reference number
ISO 11785:2026(en)

COPYRIGHT PROTECTED DOCUMENT

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Abbreviated terms **3**
5 Requirements **3**
5.1 General 3
5.2 Full duplex system 4
5.3 Half duplex system 6
Annex A (normative) **Cyclic redundancy check (CRC) check for error detection** **10**
Annex B (informative) **Synchronization** **13**
Bibliography **15**

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 19, *Agricultural electronics*.

This second edition cancels and replaces the first edition (ISO 11785:1996), which has been technically revised. It also incorporates the Technical Corrigendum ISO 11785:1996/Cor. 1:2008.

The main changes are as follows.

— The annex integration of the installed base (former Annex A) has been removed. Subsequent annexes have been relabelled.

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.

Introduction

The technical concept of animal identification described is based upon the principle of radio-frequency identification (RFID). ISO 11785 is applicable in connection with ISO 11784 which describes the structure and the information content of the codes stored in the transponder.

Radio frequency identification of animals — Technical concept

1 Scope

This document specifies how a transponder is activated and how the stored information is transferred to a transceiver.

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 11784, *Radio frequency identification of animals — Code structure*

ISO 24631-7, *Radiofrequency identification of animals — Part 7: Synchronization of ISO 11785 identification systems*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
activation field
electromagnetic field transmitted by a transceiver to energize and/or activate a transponder

3.2
activation frequency
frequency of the activation field

3.4
bit rate
number of bits transmitted per second

3.5
differential bi-phase encoding
DBP
method of encoding in which data bit 0 is represented by a mid-bit transition, data bit 1 is represented by no transition, and there is always a transition in between two bits

3.6
encoding
one to one relationship between basic information elements and modulation patterns

3.7
error detection code
bits that contain information which can be used to detect errors