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Radiofrequency identification of animals —

Part 3: Evaluation of performance of RFID transponders conforming with ISO 11784 and ISO 11785

Identification des animaux par radiofréquence —

Partie 3: Évaluation de la performance des transpondeurs RFID conformes à l'ISO 11784 et à l'ISO 11785

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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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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

For an explanation on 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 the following URL: 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 24631-3:2009), which has been technically revised.

The main changes compared to the previous edition are as follows:

— quality of the figures has been improved (see Clause 7).

A list of all parts in the ISO 24631 series can be found on the ISO website.

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Introduction

ISO has appointed a registration authority (RA) competent to register manufacturer codes used in the radiofrequency identification (RFID) of animals in accordance with ISO 11784 and ISO 11785.

The registration authority for ISO 11784 and ISO 11785 can found under http://www.iso.org/iso/home/standards_development/list_of_iso_technical_committees/maintenance_agencies.htm.

This document deals with the performance of RFID transponders, of which the main types used for animal identification are

— injectable transponders,

— electronic ear tag transponders,

— electronic ruminal bolus transponders,

— leg tag transponders, and

— tag attachments.

This document permits the characterization of the two RFID communication paths: the energy transfer from transceiver to transponder and the data transfer from transponder to transceiver. This characterization can be obtained from the results of two measurements: the first determining the minimal activating magnetic field strength needed for transmitting the information and the second the transponder modulation amplitude. Both measurements use a reference measurement antenna configuration under conditions allowing the absolute values to be obtained for comparison of data between the tested transponders. Additional measurements that contribute to the performance assessment of the transponders are the bit length stability in the case of FDX-B transponders and the frequency stability in the case of HDX transponders. These parameters can be measured using the same measurement antenna configuration.

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Radiofrequency identification of animals —

Part 3:
Evaluation of performance of RFID transponders conforming with ISO 11784 and ISO 11785

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1 Scope

This document provides the means of evaluating the performance of ISO 11784- and ISO 11785-conformant radiofrequency identification (RFID) transponders used in the individual identification of animals.

The test procedures specified in this document are recognized by the Federation of European Companion Animals Veterinary Association (FECAVA) and World Small Animal Veterinarian Association (WSAVA) and as such can be applied also to companion animals.

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 11785:1996, *Radio frequency identification of animals — Technical concept*

ISO 24631-1, *Radiofrequency identification of animals — Part 1: Evaluation of conformance of RFID transponders with ISO 11784 and ISO 11785 (including granting and use of a manufacturer code)*

3 Terms and definitions

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

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

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

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

3.1
accreditation
third-party attestation related to a conformity assessment body conveying formal demonstration of its competence to carry out specific conformity assessment tasks

[SOURCE: ISO/IEC 17000:2004, 5.6]

3.2
activation field
electromagnetic field with a frequency of 134,2 kHz

3.3
bit length stability
stability of an FDX-B *transponder* (3.18) expressed by the standard deviation of the duration of one-bit information

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