



International
Standard

ISO 24631-3

**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).

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

This third edition cancels and replaces the second edition (ISO 24631-3:2017), which has been technically revised.

The main changes are as follows:

- the former Annex B has been removed because the current source presented does not function;
- a new [Annex B](#) has been added to discuss the interpretation of the technical parameters.

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

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

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 be found under https://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.

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.

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