

BS ISO 24631-7:2012



BSI Standards Publication

Radiofrequency identification of animals

Part 7: Synchronization of ISO 11785
identification systems

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National foreword

This British Standard is the UK implementation of ISO 24631-7:2012.

The UK participation in its preparation was entrusted to Technical Committee AGE/6/1, Radio Frequency ID for Animals.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Radiofrequency identification of animals —

Part 7: Synchronization of ISO 11785 identification systems

Identification des animaux par radiofréquence —

*Partie 7: Synchronisation des systèmes d'identification conformes 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

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

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.

ISO 24631-7 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 19, *Agricultural electronics*.

ISO 24631 consists of the following parts, under the general title *Radio frequency 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)*
- *Part 2: Evaluation of conformance of RFID transceivers with ISO 11784 and ISO 11785*
- *Part 3: Evaluation of performance of RFID transponders conforming with ISO 11784 and ISO 11785*
- *Part 4: Evaluation of performance of RFID transceivers conforming with ISO 11784 and ISO 11785*
- *Part 5: Procedure for testing capability of RFID transceivers of reading ISO 11784 and ISO 11785 transponders*
- *Part 6: Representation of animal identification information (visual display/data transfer)*
- *Part 7: Synchronization of ISO 11785 identification systems*

Introduction

Wired synchronization is briefly explained in Clause C.2 of ISO 11785:1996.

This part of ISO 24631 describes in detail the method for synchronizing stationary ISO 11785 transmitters and receivers, as well as the method for allowing mobile readers to read ISO 11785 and Annex A transponders while in physical proximity of stationary readers.

Radiofrequency identification of animals —

Part 7:

Synchronization of ISO 11785 identification systems

1 Scope

This part of ISO 24631 specifies rules and procedures for synchronizing RFID transceivers while reading transponders used in individual animal identification complying to ISO 11784 and ISO 11785.

The synchronization scheme described herein may be fully implemented within each reader, and such readers when attached to the synchronization bus create a peer-to-peer network (all readers are equal – there is no dedicated master). Additionally, a cluster of readers, which could be in a master/slave configuration, may also be added to the bus using a dedicated, manufacturer specific Synchronization Interface. The Synchronization Interface presents to the synchronization bus electrical characteristics identical to those of a single peer-to-peer reader.

The transceiver conformance standard ISO 24631-2 permits activation on/off timing tolerances of $-0/+1$ ms and therefore gives reader manufacturers options as to their preferred method for detecting the HDX header; partial or full. However, when synchronizing readers, irrespective of which header detection method is used, it is critical that all readers adhere strictly to the specific timings and timing tolerances as given in the timing diagrams.

Particular attention should also be given to fault diagnostics which becomes more important when a reader network comprises products from different manufacturers. The obvious case is where a reader which is part of a network has become detached e.g. sync cable break, and it considers it's self to be now standalone and thus permitted to operate asynchronously to the detriment of all other readers.

2 Normative reference

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 11784:1996, *Radio frequency identification of animals — Code structure*

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

3 Terms and definitions

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

3.1

transceiver

device used to communicate with the transponder

3.2

transponder

radiofrequency identification (RFID) device that transmits its stored information when activated by a transceiver and that may be able to store new information

Note 1 to entry: See ISO 24631-1 for definitions of the main types.