Irish Standard
I.S. EN 13757-4:2013

Communication systems for meters and remote reading of meters - Part 4: Wireless meter readout (Radio meter reading for operation in SRD bands)

I.S. EN 13757-4:2013

Incorporating amendments/corrigenda/National Annexes issued since publication:

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I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

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SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces:
EN 13757-4:2005

This document is based on:	*Published:*
EN 13757-4:2013	20 August, 2013
EN 13757-4:2005	29 June, 2005

This document was published under the authority of the NSAI and comes into effect on:
20 August, 2013

ICS number:
33.200
35.100.10
35.100.20

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I.S. EN 13757-4:2013

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13757-4

August 2013

ICS 33.200; 35.100.10; 35.100.20

Supersedes EN 13757-4:2005

English Version

Communication systems for meters and remote reading of meters - Part 4: Wireless meter readout (Radio meter reading for operation in SRD bands)

Systèmes de communication et de télérelevé des compteurs - Partie 4: Echange de données des compteurs par radio (Lecture de compteurs dans la bande SRD)

Kommunikationssysteme für Zähler und deren Fernablesung - Teil 4: Zählerauslesung über Funk (Fernablesung von Zählern im SRD-Band)

This European Standard was approved by CEN on 29 June 2013.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Ref. No. EN 13757-4:2013: E

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Foreword

This document (EN 13757-4:2013) has been prepared by Technical Committee CEN/TC 294 “Communication systems for meters and remote reading of meters”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by February 2014, and conflicting national standards shall be withdrawn at the latest by February 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or] CENELEC shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13757-4:2005.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

The main changes since EN 13757-4:2005 are as follows:

— Referenced standards have been updated to the most recent versions.

— Terms and definitions were introduced; see Clause 3.

— Mode C, a compact mode, with more efficient data format has been introduced, see Clause 8.

— Mode N, a narrowband mode for the recently enabled dedicated 169 MHz band has been introduced; see Clause 9.

— Mode F, a frequent receive mode for long range communication in the 433 MHz band has been introduced; see Clause 10.

— The definitions for the Data Link Layer have been moved to a common section; see Clause 11. This includes the existing format, frame format A as well as a more efficient coding, frame format B.

— The address field has been changed from always being the meter address to instead always being the sender address; see 11.5.6.

— Synchronised/predictive timing of transmission to reduce power consumption has been introduced; see 11.6.

— Connections to higher protocol layers to take into account the development of other parts of this standard have been introduced; see Clause 12. This introduces an extension of the Data Link Layer and a Transport Layer.

— An informative example of predictive timing has been added; see Annex D.

— Informative Timing diagrams have been added; see Annex E.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies the requirements of parameters for the physical and the link layer for systems using radio to read remote meters. The primary focus is to use the Short Range Device (SRD) unlicensed telemetry bands. The standard encompasses systems for walk-by, drive-by and fixed installations. As a broad definition, this European Standard can be applied to various application layers.

2 Normative references

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.

EN 13757-1, *Communication system for meters and remote reading of meters — Part 1: Data exchange*

EN 13757-3:2013, *Communication systems for and remote reading of meters — Part 3: Dedicated application layer*

EN 60870-5-1, *Telecontrol equipment and systems — Part 5: Transmission protocols — Section 1: Transmission frame formats (IEC 60870-5-1)*

EN 60870-5-2, *Telecontrol equipment and systems — Part 5: Transmission protocols — Section 2: Link transmission procedures (IEC 60870-5-2)*

ISO/IEC 646, *Information technology — ISO 7-bit coded character set for information interchange*

CEPT/ERC/REC 70-03, *Relating to the use of short range devices (SRD)*

ETSI EN 300 220-1, V2.4.1:2012, *Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1 000 MHz frequency range with power levels ranging up to 500 mW; Part 1: Technical characteristics and test methods*

ETSI EN 300 220-2, V2.4.1:2012, *Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1 000 MHz frequency range with power levels ranging up to 500 mW; Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive*

ETSI EN 301 489-1, V1.9.2:2011, *Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements*

ETSI EN 301 489-3, V1.4.1:2002, *Electromagnetic compatibility and Radio spectrum Matters (ERM) — ElectroMagnetic Compatibility (EMC) standard for radio equipment and services — Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 40 GHz*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

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

3.1.1
BER
bit error rate

3.1.2
frame
unit of transmission at the Data Link Layer