BSI Standards Publication

Communication systems for meters — Wireless mesh networking for meter data exchange

Part 2: Networking layer and stack specification

bsi.

National foreword

This British Standard is the UK implementation of EN 16836-2:2016.

The UK participation in its preparation was entrusted to Technical Committee PEL/894, Remote Meter Reading.

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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EN 16836-2

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ICS 33.200; 35.100.10; 35.100.30

English Version

Communication systems for meters - Wireless mesh networking for meter data exchange - Part 2: Networking layer and stack specification

Systèmes de communication des compteurs - Réseau maillé sans fil pour l'échange de données de compteurs - Partie 2 : Spécifications des couches réseau et de la pile de protocoles

Kommunikationssysteme für Zähler - Drahtloses Mesh-Netzwerk für den Zählerdatenaustausch - Teil 2: Vermittlungsschicht und Stapel-Spezifikation

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European foreword

This document (EN 16836-2:2016) has been prepared by Technical Committee CEN/TC 294 "Communication systems for 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of an identical text or by endorsement, at the latest by May 2017, and conflicting national standards shall be withdrawn at the latest by May 2017.

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Introduction

The EN 16836 series of standards details requirements for gas meters, water meters and heat meters that can interoperate with products in a mesh network that conform to this standard through a smart energy profile application layer. This standard refers to documents made freely available by the ZigBee Alliance, an organization that manages a mesh network specification (see www.zigbee.org/about/centc294).

This series of standards specifies how a mesh networking radio specification applies within the scope of European standards at the application layer, networking layer and also medium access control/physical layer (MAC/PHY).

EN 16836 consists of the following parts:

— EN 16836-1, *Communication systems for meters – Wireless mesh networking for meter data exchange — Part 1: Introduction and standardization framework*

— EN 16836-2, *Communication systems for meters – Wireless mesh networking for meter data exchange — Part 2: Networking layer and stack specification*

— EN 16836-3, *Communication systems for meters – Wireless mesh networking for meter data exchange — Part 3: Energy profile specification dedicated application layer*

This standard series is created in compliance with the terms of a memorandum of understanding (MOU) between CEN/CELELEC and the ZigBee Alliance. The principles underpinning the relationship between CEN/CENELEC and the ZigBee Alliance are described in the Consortium Bridge procedure. A copy of the MOU and the Consortium Bridge can be obtained from CEN/CENELEC.

NOTE   The term 'ZigBee' and the ZigBee Logo are registered trademarks of the ZigBee Alliance and their use is subject to the conditions of membership.

1 Scope

This European Standard specifies the requirements for the medium access control/physical layer (MAC/PHY) and networking layer of a communication protocol for the exchange of data from metering devices to other devices within a mesh network. This standard makes reference to a number of documents whereby core requirements are specified. This referencing is in compliance with the Bridge Consortium and additionally the Memorandum of Understanding between the ZigBee Alliance and CEN/CENELEC.

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 16836-1:2016, *Communication systems for meters and remote reading of meters – Wireless mesh networking for meter data exchange — Part 1: Introduction and standardization framework*

ZigBee Specification – 05-3474 Rev 20, September 7, 2012

ZigBee Pro Stack Profile – 07-4855 Rev 05, January 2008

NOTE The above ZigBee documents can be obtained from www.zigbee.org/about/centc294.

3 Terms, definitions, acronyms and abbreviations

For the purposes of this document, the terms, definitions, acronyms and abbreviations given in ZigBee Specification – 05-3474 Rev 20 and ZigBee Pro Stack Profile – 07-4855 Rev 05 apply.

4 Requirements

The MAC/PHY and networking layer of the communication protocol for the exchange of data from metering devices to other devices within a mesh network shall conform to the requirements given in the following:

EN 16836-1:2016, *Communication systems for meters and remote reading of meters – Wireless mesh networking for meter data exchange — Part 1: Introduction and standardization framework*

ZigBee Specification – 05-3474 Rev 20, September 7, 2012

ZigBee Pro Stack Profile – 07-4855 Rev 05, January 2008

Bibliography

[1]   IEEE 802.15.4:2003, *IEEE Standard for Information technology – Telecommunications and information exchange between systems – Local and metropolitan area networks – Specific requirements Part 15.4: Wireless Medium Access Control (MAC) and Physical Layer (PHY) Specifications for Low Rate Wireless Personal Area Networks (LR-WPANs)*

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