
P802.15.4-2024/Cor 1

Type of Project: Corrigendum to IEEE Standard 802.15.4-2024

Project Request Type: Initiation / Corrigendum

PAR Request Date:

PAR Approval Date:

PAR Expiration Date:

PAR Status: Draft

Root Project: 802.15.4-2024

1.1 Project Number: P802.15.4-2024/Cor 1

1.2 Type of Document: Standard

1.3 Life Cycle: Full Use

2.1 Project Title: IEEE Standard for Low?Rate Wireless Networks - Corrigendum 1

3.1 Working Group: Wireless Specialty Networks (WSN) Working Group(C/LAN/MAN/802.15 WG)

3.1.1 Contact Information for Working Group Chair:

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3.2 Society and Committee: IEEE Computer Society/LAN/MAN Standards Committee(C/LAN/MAN)

3.2.1 Contact Information for Standards Committee Chair:

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4.1 Type of Ballot: Individual

4.2 Expected Date of submission of draft to the IEEE SA for Initial Standards Committee Ballot:

Dec 2025

4.3 Projected Completion Date for Submittal to RevCom: Jul 2026

5.1 Approximate number of people expected to be actively involved in the development of this project: 12

5.2.a Scope of the complete standard: This standard defines the physical layer (PHY) and medium access control (MAC) sublayer specifications for low-data-rate wireless connectivity with fixed, portable, and moving devices with no battery or very limited battery consumption requirements. In addition, the standard provides modes that allow for precision ranging. PHYs are defined for devices operating in a variety of geographic regions.

5.2.b Scope of proposed changes: This standard specifies corrections to 15.1.2 Preamble field, 27.3.6 Pad bit insertion, 10.26.3.4 Multi-PHY IE, 11.1.3.3 Channel numbering, 10.4.12.2 DSME association response command, and 10.25.8.1 Simplified GTS specification IE.

5.3 Is the completion of this standard contingent upon the completion of another standard? No

5.4 Purpose: The standard provides for ultra low complexity, ultra low cost, ultra low power consumption, and low data rate wireless connectivity among inexpensive devices, especially targeting the communications requirements of what is now commonly referred to as the Internet of Things. In addition, some of the alternate PHYs provide precision ranging capability that is accurate to one meter. Multiple PHYs are defined to support a variety of frequency bands.

5.5 Need for the Project: This project is needed to incorporate technical corrections into the standard.

5.6 Stakeholders for the Standard: The stakeholders include manufacturers and users of telecom, medical, environmental, energy, and consumer electronics equipment and manufacturers and users of equipment involving the use of wireless sensor and control networks.

6.1 Intellectual Property

6.1.1 Is the Standards Committee aware of any copyright permissions needed for this project?

No

6.1.2 Is the Standards Committee aware of possible registration activity related to this project?

No

7.1 Are there other standards or projects with a similar scope? No

7.2 Is it the intent to develop this document jointly with another organization? No

8.1 Additional Explanatory Notes:

5.2.b - During IEEE staff editorial preparation for publication of the standard, the following errors were discovered.

Size of the matrix

In section 15.1.2 Preamble field:

The text here says: where ones(0:N) for integer number N is defined as a 1-by-N matrix of ones.

This should be 1 by N+1 (i.e., ones(0,31) is a 1 by 32 matrix)?

Error in the 4m NPAD calculation

In Section 27.3.6 Pad bit insertion:

During the original 4m submission in the balloting processing the line got accidentally changed from: NPAD = NDATA - 8 * LRS + 6 to NPAD = NDATA - (* LRS + 6)

The correct formula for this is:

$$\text{NPAD} = \text{NDATA} - (8 \times \text{LRS} + 6)$$

Duplicate figure and missing figure

In Section 10.26.3.4 Multi-PHY IE:

Figure 10-176 is the same as Figure 10-174 "RS-GFSK Device Capabilities IE Content field format". (This figure was the same as this in 802.15.4-2020.)

This should have content as in Figure 7-101d in 802.15.4t-2017, but a mistake was made during IEEE Std 802.15.4-2020 revision process.

Repeated channels

Section 11.1.3.3 Channel numbering for 868 MHz, 915 MHz, and 2450 MHz bands

This section repeats channels 0 to 10 twice.

In 802.15.4-2020, they were distinguished by "channel page", which does not appear in this revision.

Incorrect text in DSME Association Response command

Section 10.4.12.2 DSME Association Response command

Description of this command is not covering the Association Response command, it is describing the command from unassociated device to coordinator, and not the coordinators response.

It was already broken in IEEE Std 802.15.4e-2012.

GTS Device Address List

Section 10.25.8.1 Simplified GTS Specification IE

This references "GTS Device Address List" in 7.3.1.5, but there are no definitions for "GTS Device Address List" in 7.3.1.5.

This references the GTS List described in 7.3.1.5, but as there is no GTS Specification field in the IE that contains the GTS Descriptor Count, simply changing it to use the GTS List does not work.