**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title | TG8 Coexistence Assurance Document |
| Date Submitted | 19 May 2016 |
| Source | Byung-Jae Kwak (ETRI), Marco Hernandez (NICT), Billy Verso (Decawave) |
| Re: | IEEE 802.15.8 Draft Amendment |
| Abstract | Analysis on coexistence of IEEE 802.15.8 with other IEEE 802 systems within the same frequency band |
| Purpose | To address the coexistence capability of IEEE 802.15.8 to satisfy requirements of the IEEE 802.19 Work Group and IEEE 802 Executive Committee to determine if a proposed IEEE 802 standard has made a reasonable effort to be able to coexist with devices compliant to other IEEE 802 standards in their operating bands. |
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Table of Contents

[1 Scope 1](#_Toc445848261)

[2 References 1](#_Toc445848262)

[3 IEEE 802.15.8 DRAFT STANDARD overview 1](#_Toc445848263)

[3.1 Operating frequency bands 1](#_Toc445848264)

[3.2 Modulation parameters 2](#_Toc445848265)

[3.3 Coexistence mechanisms 2](#_Toc445848266)

[4 Other IEEE 802 standards occupying the same frequency bands 2](#_Toc445848267)

# Scope

The IEEE 802.19 Work Group has mandated that new wireless standards developed under IEEE 802 be accompanied by a *Coexistence Assurance* document. In [1], guidelines are provided for how coexistence can be quantified based on predicted packet error rates among IEEE 802 wireless devices. Hence, this coexistence assurance document is provided by the IEEE 802.15.8 Task Group to satisfy the requirements of the IEEE 802.19 Work Group and IEEE 802 Executive Committee.

This document addresses the coexistence of the IEEE 802.15.8 compliant systems with other IEEE 802 standards operating in the same frequency bands.

# References

1. S. Shellhammer, “Writing a Coexistence Assurance Document,” IEEE 802.19-09/0001r0, 2009.

# IEEE 802.15.8 draft standard overview

The IEEE 802.15.8 uses modulations and other PHY layer characteristics already defined in the IEEE 802.15 and IEEE 802.11 standards.

## Operating frequency bands

The allocated frequency bands for the IEEE 802.15.8 standard are:

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| --- | --- | --- |
| **Frequency band (MHz)** | **Modulation** | **Multiple antennas** |
| 2400 − 2483.55725 − 5875 | OFDM | BPSK, QPSK, 16QAM, 64QAM | Beamforming |
| 915.9 – 929.7 | Filtered OFDM |  |
|  | GFSK |  |
| 2400 − 2483.55725 − 5875 | OFDMA | BPSK, QPSK, 16QAM, 64QAM | MIMO |
| 3100 − 10600 | UWB | BPM-BSPK, OOK | -- |

## Modulation parameters

No new modulation methods are introduced by this standard.

## Coexistence mechanisms

This standard makes no changes to the available coexistence mechanisms in 802.15.4, 802.15.6, 802.11a, and 802.11n. Refer doc. 15-16-233r0 for UWB coexistence analysis and mechanism.

# Other IEEE 802 standards occupying the same frequency bands

The IEEE 802 standards operating in the same bands are 802.15.4, 802.15.6, 802.11a, and 802.11n.