**IEEE P802.15**

**Wireless Personal Area Networks**

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| Re: | Coexistence Analysis | |
| Abstract | [IEEE 802.15.4q Coexistence Document] | |
| Purpose | [Coexistence Document supporting 15.4q draft] | |
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Contents

Contents

1 Introduction 4

1.1 Bibliography 4

2 Overview 4

2.1 Regulatory Information 4

2.2 Overview of Coexistence Mechanisms in 802.15.4 and 802.15.4q 4

# 1 Introduction

## 1.1 Bibliography

(B1) IEEE 802.15-13-0212-05-004p Coexistence Document for IEEE 802.15.4p.

(B2) IEEE 802.15-12-0314-01-004k TG4k Coexistence Document.

(B3) IEEE 802.15-12-0386-06-004q-ulp-par.

# 2 Overview

The Ultra Low Power (ULP) GFSK and ULP TASK Physical Layers defined in amendment 802.15.4q are substantially similar to the Physical Layers defined in amendments 802.15.4k and 802.15.4p. The bands used are a subset of the union of the bands defined in those amendments. The coexistence assurance documents defined for 15.4k and 15.4p provide adequate analysis for 15.4q environment.

## 2.1 Regulatory Information

The available US, European and Asian bands for 802.15.4q:

Table Frequency Bands for 802.15.4q PHYs

|  |  |  |  |
| --- | --- | --- | --- |
| **Frequency Bands (MHz)** | **Designation** | **ULP GFSK** | **ULP TASK** |
| 169.400-169.475 | 169 MHz band | Yes | No |
| 433.050-434.790 | 433 MHz band | Yes | Yes |
| 450-470 | 450 MHz band | Yes | No |
| 470-510 | 470 MHz band | Yes | Yes |
| 779-787 | 780 MHz band | Yes | Yes |
| 863-876 | 863 MHz band | Yes | Yes |
| 896-901 | 896 MHz band | Yes | No |
| 901-902 | 901 MHz band | Yes | No |
| 902-928 | 915 MHz band | Yes | Yes |
| 915-921 | 918 MHz band | Yes | No |
| 917-923.5 | 917 MHz band | Yes | No |
| 928-960 | 928 MHz band | Yes | Yes |
| 1427-1518 | 1427 MHz band | Yes | No |
| 2400-2483.5 | 2450 MHz band | Yes | Yes |

## 2.2 Overview of Coexistence Mechanisms in 802.15.4 and 802.15.4q

The 802.15.4q amendment specifies two alternative PHYs that may be operating co-located in the same frequency bands as shown in Table 1. Some of these bands are also used by other 802.15.4 PHYs and other 802 wireless services.

The coexistence mechanisms specified in 802.15.4 and subsequent amendments are applicable to both homogeneous (among different 15.4q PHYs) and heterogeneous (across other 802 systems) coexistence.

The analysis contained in [B1] and [B2] applies as well to the services and bands used by this amendment and they are offered as the basis for 15.4q coexistence assurance.

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