IEEE P802.11
Wireless LANs

|  |
| --- |
| TGbf Coexistence Assessment |
| Date: 2022-10-19 |
| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Assaf Kasher | Qualcomm |  |  | akasher@qit.qualcomm.com |
|  |  |  |  |  |

Abstract

This serves as the coexistence assessment document for TGbf in meeting the requirement of the CSD

# Introduction

This document addresses coexistence of IEEE std 802.11bf [1] per the PAR [2] and CSD [3]. The relevant sections of the P802.11bf PAR and CSD are outlined below:

In the PAR scope (5.2.b)

“This amendment provides backward compatibility and coexistence with legacy IEEE 802.11 devices operating in the same band.”

In the CSD:

The response to 1.1.2: “Will the WG create a CA document as part of the WG balloting process as described in Clause 13? **Yes**”

# Bands of Operation

As specified in the PAR, the 802.11bf amendment operates in license-exempt frequency bands between 1 GHz and 7.125 GHz and above 45 GHz. Specifically, it proposes 802.11 medium access control layer (MAC) changes in all bands, both between 1GHz and 7.125GHz and above 45GHz and PHY changes for Directional Multi Gigabit (DMG) and Enhanced DMG (EDMG) operation above 45GHz.

# Coexistence with legacy 802.11 Systems

# Coexistence with legacy 802.11 Systems in bands between 1GHz and 7.125GHz

The 802.11bf amendment does not propose any PHY changes in the bands between 1GHz and 7.125GHz. All the MAC changes proposed in the amendment are compatible with medium access rules that are part of IEEE 802.11-2020, the IEEE 802.11az amendment and the P802.11be amendment. Therefore, devices operating in compliance with the 802.11bf amendment will not create interference to devices operating in these bands more than those legacy devices themselves.

# Coexistence with legacy 802.11 Systems in bands above 45GHz

The 802.11bf amendment proposes some PHY level changes to the EDMG physical layer. However, all the PPDU types proposed can be detected and decoded by legacy EDMG devices and their length can be determined by legacy DMG devices. Transmissions based on those new PPDU structure will comply with the same transmit mask as those of legacy E/DMG devices. The PHY and MAC changes proposed for operation in this band do not change the medium access rules. Therefore, devices operating in compliance of 802.11bf have the same level of coexistence as legacy E/DMG devices.

# Coexistence with non 802.11 Systems operating in the same bands

As explained in clause 3, the 802.11bf amendment does not change medium access methods from legacy 802.11 devices. Therefore, coexistence provided by 802.11bf devices to non 802.11 devices will be at the same level provided by legacy 802.11 devices.

**References:**

**[1] P802.11bf D1.0**

**[2]** [**11-19-2103-11-SENS-802-11-sens-sg-proposed-par**](https://mentor.ieee.org/802.11/dcn/19/11-19-2103-11-SENS-802-11-sens-sg-proposed-par.docx)

**[3]** [**11-20-0042-06-SENS-sens-sg-proposed-csd-draft**](https://mentor.ieee.org/802.11/dcn/20/11-20-0042-06-SENS-sens-sg-proposed-csd-draft.docx)

**[4] IEEE Std 802.11-2020**

**[5] P802.11be D2.0**

**[6] P802.11az D7.0**