IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| PDT PHY RU and MRU restrictions for 20 MHz operation | | | | |
| Date: 2024-12-05 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Eunsung Park | LG Electronics | 19, Yangjae-daero 11gil, Seocho-gu, Seoul 137-130, Korea |  | [esung.park@lge.com](mailto:esung.park@lge.com) |
| Bo Gong | Huawei |  |  |  |
| Xuwen Zhao | TCL |  |  |  |
| Jiyang Bai | TCL |  |  |  |
| Lin Yang | Qualcomm |  |  |  |
| Shengquan Hu | MediaTek |  |  |  |
| Jianhan Liu | MediaTek |  |  |  |
| Yan Xin | Huawei |  |  |  |
| Bo Sun | Sanechips |  |  |  |
| Youhan Kim | Qualcomm |  |  |  |
| Ross Jian Yu | Huawei |  |  |  |
| Rui Yang | InterDigital |  |  |  |

Abstract

This document contains Proposed Draft Text (PDT) for the RU and MRU restrictions for 20 MHz operation subclause of the proposed TGbn (UHR, Ultra High Reliability) amendment to the 802.11 standard.

**Revision information**

The following is a summary of the important changes that occurred within each revision of this document:

|  |  |
| --- | --- |
| **Revision** | **Major changes** |
| 0 | Initial revision |
|  |  |
|  |  |
|  |  |
|  |  |

**Introduction**

Interpretation of a Motion to Adopt.

A motion to approve this submission means that the editing instructions and any changed or added material are actioned in the TGbn Draft. The abstract, revision information, introduction, explanation of the proposed changes and references sections are not part of the adopted material.

***Editing instructions formatted like this are intended to be copied into the TGbn Draft (i.e. they are instructions to the 802.11 editor on how to merge the text with the baseline documents).***

**Explanation of the proposed changes:**

The proposed changes to the 802.11 TGbn draft within this document are based on the following motions adopted by the TGbn task group:

**Relevant passing motions:**

The proposed changes to the 802.11 TGbn draft within this document are based on the following motion adopted by the TGbn task group.

[Motion #90, [1]]

* For a 40 MHz PPDU, the following DBW mode is allowed for DRU
  + Only 40 MHz mode

**Text to be adopted begins here.**

***TGbn editor: Please add the following new subclause 38.3.2.x RU and MRU restrictions for 20 MHz operation to the 802.11bn draft D0.1:***

# 38.3.2.x RU and MRU restrictions for 20 MHz operation

For a 20 MHz operating non-AP UHR STA receiving a 40 MHz, 80 MHz, 160 MHz, or 320 MHz UHR MU PPDU, or transmitting a 40 MHz, 80 MHz, 160 MHz, or 320 MHz UHR TB PPDU, it is noteworthy that the 20 MHz RU or MRU tone mapping (see 38.3.2 (Subcarrier and resource allocation)) is not aligned with the 40 MHz, 80 MHz, 160 MHz, or 320 MHz RU or MRU tone mapping (see 38.3.2.x (Subcarriers and resource allocation in UHR PPDUs)) when RRUs are used for a transmission.

A 20 MHz operating non-AP UHR STA does not support the following RU(s) or MRU(s) when RRUs are used for a transmission where the RU indices are defined in Table 27-8 (Data and pilot subcarrier indices for RUs in a 40 MHz HE PPDU and in a non-OFDMA 40 MHz HE PPDU) and the MRU indices are defined in Table 36-9 (Indices for small size MRUs in an OFDMA 40 MHz EHT PPDU):

—26-tone RU 5 and 14 of a 40 MHz UHR MU PPDU (receive) and UHR TB PPDU (transmit)

—52+26-tone MRU 2 and 5 of a 40 MHz UHR MU PPDU (receive) and UHR TB PPDU (transmit)

A 20 MHz operating non-AP UHR STA does not support the following RU(s) or MRU(s) when RRUs are used for a transmission where the RU indices are defined in Table 36-5 (Data and pilot subcarrier indices for RUs in an 80 MHz EHT PPDU) and the MRU indices are defined in Table 36-10 (Indices for small size MRUs in an OFDMA 80 MHz EHT PPDU):

—26-tone RU 5, 14, 24, and 33 of an 80 MHz UHR MU PPDU (receive) and UHR TB PPDU (transmit)

—52+26-tone MRU 2, 5, 8, and 11 of an 80 MHz UHR MU PPDU (receive) and UHR TB PPDU (transmit)

A 20 MHz operating non-AP UHR STA does not support the following RU(s) or MRU(s) when RRUs are used for a transmission where the RU indices are defined in Table 36-6 (Data and pilot subcarrier indices for RUs in a 160 MHz EHT PPDU) and the MRU indices are defined in Table 36-11 (Indices for small size MRUs in an OFDMA 160 MHz EHT PPDU)

—26-tone RU 5, 14, 24, 33, 42, 51, 61, and 70 of a 160 MHz UHR MU PPDU (receive) and UHR TB PPDU (transmit)

—52+26-tone MRU 2, 5, 8, 11, 14, 17, 20, and 23 of a 160 MHz UHR MU PPDU (receive) and UHR TB PPDU (transmit)

A 20 MHz operating non-AP UHR STA does not support the following RU(s) or MRU(s) when RRUs are used for a transmission where the RU indices are defined in Table 36-7 (Data and pilot subcarrier indices for RUs in a 320 MHz EHT PPDU) and the MRU indices are defined in Table 36-12 (Indices for small size MRUs in an OFDMA 320 MHz EHT PPDU):

—26-tone RU 5, 14, 24, 33, 42, 51, 61, 70, 79, 88, 98, 107, 116, 125, 135, and 144 of a 320 MHz UHR MU PPDU (receive) and UHR TB PPDU (transmit)

—52+26-tone MRU 2, 5, 8, 11, 14, 17, 20, 23, 26, 29, 32, 35, 38, 41, 44, and 47 of a 320 MHz UHR MU PPDU (receive) and UHR TB PPDU (transmit)

A 20 MHz operating non-AP UHR STA does not support any 106+26-tone MRUs for 40 MHz, 80 MHz, 160 MHz, and 320 MHz UHR MU PPDU (receive) and UHR TB PPDU (transmit) when RRUs are used for a transmission.

A 20 MHz operating non-AP UHR STA does not support any 242-tone RUs for 40 MHz, 80 MHz, 160 MHz, and 320 MHz UHR TB PPDU (transmit) when RRUs are used for a transmission.

NOTE 1—As defined in 37.x.y (RU allocation in an UHR MU PPDU), an UHR AP does not assign an RU or MRU to a STA that does not support the RU or MRU.

A 20 MHz operating non-AP UHR STA may support reception of a 242-tone RU for 40 MHz UHR MU PPDU (see Table 27-8 (Data and pilot subcarrier indices for RUs in a 40 MHz HE PPDU and in a non-OFDMA 40 MHz HE PPDU)) in the 2.4 GHz, 5 GHz, and 6 GHz bands, 80 MHz and 160 MHz UHR MU PPDU (see Table 36-5 (Data and pilot subcarrier indices for RUs in an 80 MHz EHT PPDU) and Table 36-6 (Data and pilot subcarrier indices for RUs in a 160 MHz EHT PPDU)) in the 5 GHz and 6 GHz bands, and 320 MHz UHR MU PPDU (see Table 36-7 (Data and pilot subcarrier indices for RUs in a 320 MHz EHT PPDU)) in the 6 GHz band when RRUs are used for a transmission. This PHY capability is indicated to the MAC sublayer by dot11UHRSupportFor242ToneRUInBWWiderThan20Implemented.

NOTE 2—The STA advertises the value of dot11UHRSupportFor242ToneRUInBWWiderThan20Implemented in the Support For 242-tone RU In BW Wider Than 20 MHz subfield in the UHR PHY Capabilities Information field in the UHR Capabilities element (see 9.4.2.aab.1 UHR PHY Capabilities Information field)).

A 20 MHz operating non-AP UHR STA does not support any DRUs for 40 MHz UHR TB PPDU (transmit).

**Text to be adopted ends here.**

# References

[1] 11-24-0171-21-00bn-tgbn-motions-list-part-1

[2] IEEE P802.11be D7.0