IEEE P802.11
Wireless LANs

|  |
| --- |
| HE-SIG-A fields proposed text changes |
| Date: 2019-9-11 |
| Author(s): |
| Name | Affiliation | Address | Phone | Email |
| Yan Zhang | Marvell  | 5488 Marvell Ln, Santa Clara, CA 95054 | 408-222-0975 | yzhang@marvell.com |
| Sudhir Srinivasa |  |  |

Abstract: This document contains proposed text changes for fields in HE-SIG-A of MU PPDU in D4.3.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Two Parts of HE-SIG-A** | **Bit** | **Field** | **Number of bits** | **Description** |
| B15-B17 | Bandwidth | **3** | …If the HE-SIG-B(#20554) Compression field is 0:Set to 4 for preamble puncturing in 80 MHz, where in the preamble only the secondary 20 MHz is punc­tured.Set to 5 for preamble puncturing in 80 MHz, where in the preamble only one of the two 20 MHz sub-channels in secondary 40 MHz is punctured.Set to 6 for preamble puncturing in 160 MHz or 80+80 MHz, where in the primary 80 MHz of the preamble only the secondary 20 MHz is punctured.Set to 7 for preamble puncturing in 160 MHz or 80+80 MHz, where in the primary 80 MHz of the preamble the primary 40 MHz is present.… |

Discussion

The description for Bandwidth field value set to 7 is not very clear about which sub channels can be punctured. It only states that primary 40MHz is present in the primary 80MHz of the preamble. Based on this description, value 7 can also apply to non-punctured 160MHz and 80+80MHz cases. To make it clear to the readers, it is best to include descriptions of which sub channels can be punctured for this value 7 as the descriptions for values 4-6.

* On P555L56 : Please change to the following text

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Two Parts of HE-SIG-A** | **Bit** | **Field** | **Number of bits** | **Description** |
| B15-B17 | Bandwidth | **3** | …If the HE-SIG-B(#20554) Compression field is 0:Set to 4 for preamble puncturing in 80 MHz, where in the preamble only the secondary 20 MHz is punc­tured.Set to 5 for preamble puncturing in 80 MHz, where in the preamble only one of the two 20 MHz sub-channels in secondary 40 MHz is punctured.Set to 6 for preamble puncturing in 160 MHz or 80+80 MHz, where in the primary 80 MHz of the preamble only the secondary 20 MHz is punctured.Set to 7 for preamble puncturing in 160 MHz or 80+80 MHz, where in the primary 80 MHz of the preamble the primary 40 MHz is present, and at least one of 20MHz subchannels other than the primary 40MHz is punctured.… |

* On P478L45 : Please change to the following text

**Table 27-1—TXVECTOR and RXVECTOR parameters**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Parameter** | **Condition** | **Value** | **TXVECTOR** | **RXVECTOR** |
| **…** | **…** | **…** | **…** | **…** |
| CH\_BANDWIDTH | … | … | … | … |
| … | … | … | … |
| FORMAT is HE\_MU | Indicates the channel width of the PPDU.(#21409)Enumerated type:CBW20 for full 20 MHz CBW40 for full 40 MHz CBW80 for full 80 MHz CBW160 for full 160 MHzCBW80+80 for 80+80 MHz(#21409)HE-CBW-PUNC80-PRI for preamble puncturing in 80 MHz, where in the preamble only the secondary 20 MHz is puncturedHE-CBW-PUNC80-SEC for preamble puncturing in 80 MHz, where in the preamble only one of the two 20 MHz subchannels in secondary 40 MHz is puncturedHE-CBW-PUNC160-PRI20 for preamble puncturing in 160 MHz, where in the primary 80 MHz of the preamble only the secondary 20 MHz channel is puncturedHE-CBW-PUNC80+80-PRI20 for preamble puncturing in 80+80 MHz, where in the primary 80 MHz of the preamble only the secondary 20 MHz channel is puncturedHE-CBW-PUNC160-SEC40 for preamble puncturing in 160 MHz or 80+80 MHz, where in the primary 80 MHz of the preamble the primary 40 MHz is present, and at least one of 20MHz subchannels other than those in the primary 40MHz is punctured.HE-CBW-PUNC80+80-SEC40 for preamble puncturing in 80+80 MHz, where in the primary 80 MHz of the preamble the primary 40 MHz is present(#21388), and at least one of 20MHz subchannels other than those in the primary 40MHz is punctured. | Y | Y |

* On P492L57 : Please change to the following text

**Table 27-3— Interpretation of FORMAT, NON\_HT Modulation and CH\_BANDWIDTH parameters**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Format** | **NON\_HT\_MODULATION** | **CH\_BANDWIDTH** | **CH\_OFFSET** | **PPDU format** |
| HE | N/A | HE-CBW-PUNC160-SEC40 | N/A | The STA transmits an HE PPDU on the punctured 160 MHz bandwidth where the primary 40 MHz in the primary 80 MHz is present), and at least one of 20MHz subchannels other than those in the primary 40MHz is punctured |
| HE | N/A | HE-CBW-PUNC80+80-SEC40 | N/A | The STA transmits an HE PPDU on the punctured 80+80 MHz bandwidth where the primary 40 MHz in the primary 80 MHz is present (#21388) , and at least one of 20MHz subchannels other than those in the primary 40MHz is punctured. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Two Parts of HE-SIG-A** | **Bit** | **Field** | **Number of bits** | **Description** |
| B18-B21 | Number Of HE-SIG-B Symbols or MU-MIMO Users | **4** | …Set to the number of OFDM symbols in the HE-SIG-B field minus 1 if the number of OFDM symbols in the HE-SIG-B field is less than 16;Set to 15 to indicate that the number of OFDM sym­bols in the HE-SIG-B field is equal to 16 if Longer Than 16 HE-SIG-B OFDM Symbols Support sub­field(#20708) of the HE Capabilities element trans­mitted by at least one recipient STA is 0;Set to 15 to indicate that the number of OFDM sym­bols in the HE-SIG-B field is greater than or equal to 16 if the Longer Than 16 HE-SIG-B OFDM Sym­bols Support subfield(#20708) of the HE Capabili­ties element transmitted by all the recipient STAs are 1 and if the HE-SIG-B data rate is less than MCS 4 without DCM. The exact number of OFDM symbols in the HE-SIG-B field is calculated based on the number of User fields in the HE-SIG-B content channel which is indicated by HE-SIG-B common field in this case.… |

Discussion

In the statement “Set to 15 to indicate that the number of OFDM sym­bols in the HE-SIG-B field is greater than or equal to 16 if the Longer Than 16 HE-SIG-B OFDM Sym­bols Support subfield(#20708) of the HE Capabili­ties element transmitted by all the recipient STAs are 1 and if the HE-SIG-B data rate is less than MCS 4 without DCM.”, it is not clear what “HE-SIG-B data rate is less than MCS 4 without DCM” means. Is data rate in Mbps unit as in MCS tables? For different BW configurations, such as 20MHz or 40MHz and above, the data rates are different. It is simpler to just specify the MCS levels with/out DCM will result in HE-SIG-B symbols greater than or equal to 16.

* On P556L23 : Please change to the following text

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Two Parts of HE-SIG-A** | **Bit** | **Field** | **Number of bits** | **Description** |
| B18-B21 | Number Of HE-SIG-B Symbols or MU-MIMO Users | **4** | …Set to the number of OFDM symbols in the HE-SIG-B field minus 1 if the number of OFDM symbols in the HE-SIG-B field is less than 16;Set to 15 to indicate that the number of OFDM sym­bols in the HE-SIG-B field is equal to 16 if Longer Than 16 HE-SIG-B OFDM Symbols Support sub­field(#20708) of the HE Capabilities element trans­mitted by at least one recipient STA is 0;Set to 15 to indicate that the number of OFDM sym­bols in the HE-SIG-B field is greater than or equal to 16 if the Longer Than 16 HE-SIG-B OFDM Sym­bols Support subfield(#20708) of the HE Capabili­ties element transmitted by all the recipient STAs are 1 and if the HE-SIG-BMCS value is set to 0, 1, 2, 3 regardless HE-SIG-B DCM value, or 4 with HE-SIG-B DCM set to 1. The exact number of OFDM symbols in the HE-SIG-B field is calculated based on the number of User fields in the HE-SIG-B content channel which is indicated by HE-SIG-B common field in this case.… |