IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Spec Text on Bandwidth Field in HE-SIG-A of HE-MU Format | | | | |
| Date: 2016-07-25 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Hongyuan Zhang | Marvell |  |  |  |
| Ron Porat | Broadcom |  |  |  |
| Jianhan Liu | Mediatek |  |  |  |
| Qinghua Li | Intel |  |  |  |
| Joonsuk Kim | Apple |  |  |  |
| Bin Tian | Qualcomm |  |  |  |
| Yunbo Li | Huawei |  |  |  |
| Jinsoo Choi | LG |  |  |  |
| Kaushik Josiam | Samsung |  |  |  |

Abstract

This submission contains spec text to be incorporated in P802.11ax D0.3 related to BW field in HE-MU format as discussed per 11/16-898r0.

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

***TGax Editor: Editing instructions preceded by “TGax Editor” are instructions to the TGax editor to modify or insert material in the TGax draft. As a result of adopting the changes, the TGax editor will execute the instructions rather than copy them to the TGax Draft.***

**TGax Editor: *Instruction:*** *change the paragraph in 26.1.1 in page 69 of D0.2.*

**26.1.1 Introduction to the HE PHY**

………

The HE PHY provides support for 20 MHz, 40 MHz, 80 MHz and 160 MHz contiguous channel widths and support for 80+80 MHz non-contiguous channel width. For channel widths greater than or equal to 80 MHz, the HE PHY supports channel ~~bonding~~ puncturing transmissions where one or more of the non-primary 20 MHz channels in an HE MU PPDU with more than one RU is zeroed out.

**TGax Editor: *Instruction: make the following changes in*** *26.3.9.7 in pages 108-110 of D0.2.*

**26.3.9.7 HE-SIG-A**

**………………**

**TGax Editor: *Instruction: in Table 26-16 (Fields in the HE-SIG-A for an HE MU PPDU), make the following changes***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | TBD | Bandwidth | ~~>=2~~ 3 | |  | | --- | | Set to 0 for full 20 MHz  Set to 1 for full 40 MHz  Set to 2 for full 80 MHz  Set to 3 for full 160 MHz and 80+80 MHz  Set to 4 for preamble puncturing in 80MHz, where in the preamble only the secondary 20MHz is punctured  Set to 5 for preamble puncturing in 80MHz, where in the preamble only one of the two 20MHz sub-channels in secondary 40MHz is punctured  Set to 6 for preamble puncturing in 160MHz or 80+80 MHz, where in the primary 80MHz of the preamble only the secondary 20MHz is punctured  Set to 7 for preamble puncturing in 160MHz or 80+80MHz, where in the primary 80MHz of the preamble the primary 40MHz is present. | |

**TGax Editor: *Instruction: below Table 26-16 (Fields in the HE-SIG-A for an HE MU PPDU), insert the following paragraphs***

Notes: When the Bandwidth field is set to 5 or 7, HE-SIG-B may indicate which 20MHz sub-channel(s) in the preamble of secondary 40MHz channel are punctured by its RU allocation signaling; when the Bandwidth field is set to 6 or 7, HE-SIG-B may indicate which 20MHz sub-channel(s) in the preamble of secondary 80MHz channel are punctured by its RU allocation signaling. Refer to clause 26.3.9.8 (HE-SIG-B) for the RU allocation signaling.

It is optional for an HE STA to receive a preamble-punctured HE MU PPDU with the Bandwidth field in HE-SIG-A setting to a values 4 to 7. Whether or not an HE STA is capable of receiving preamble-punctured HE MU PPDU with the Bandwidth field of HE-SIG-A field setting to 4, 5, 6, 7 are indicated by the Preamble Puncturing Receive Capable subfield in the HE Capabilities field, as in 9.4.2.213 (HE Capabilities Element).

**TGax Editor: *Instruction: make the following changes at the end of clause******26.3.9.8.2 (Frequency domain mapping)*** *in page 115 of D0.2.*

**26.3.9.8.2 Frequency domain mapping**

**……**

For MU-MIMO allocation of RU size > 20 MHz, the User Block subfields are dynamically split between the two HE-SIG-B content channels (1/2) and the split is decided by the AP (on a per case basis). See 26.3.9.8.4 (HE-SIG-B common content) and 26.3.9.8.5 (HE-SIG-B per-user content)(#1006) for more details.

When preamble puncturing is present as indicated by the Bandwidth field of HE-SIG-A field setting to values 4~7 in an HE MU PPDU (as in Table 26-16 (Fields in the HE-SIG-A for an HE MU PPDU)), the frequency domain structure of HE-SIG-B stay the same as defined for the full bandwidth, i.e. the HE-SIG-B frequency domain structure is solely dependent on the total bandwidth.

**TGax Editor: *Instruction: make the following changes in clause******26.3.14.1 (Transmit Spectral Mask)*** *in page 162 of D0.2.*

**26.3.14.1 Transmit spectral mask**

When channel puncturing happens in an HE MU PPDU, the HE MU PPDU is still treated as an 80 MHz or 160 MHz (80+80 MHz) PPDU, therefore the spectral mask is the same as those defined for the total channel width.

**TGax Editor: *Insert a new field, 4 bits in length, in the corresponding Figures in 9.4.2.213 HE Capabilities element of D0.2.***

Preamble Puncturing Receive Capable

**TGax Editor: *Insert the paragraphs below at the end of the subclause 9.4.2.213 HE Capabilities element of D0.2:***

The Preamble Puncturing Receive Capable subfield indicates whether an HE STA is capable of receiving a preamble-punctured HE MU PPDU with the Bandwith field in HE-SIG-A field setting to values 4, 5, 6, or 7. This subfield contains 4 bits, indicating (from LSB to MSB) being capable of receiving HE MU PPDU with the Bandwidth field of HE-SIG-A setting to 4, 5, 6, 7 respectively. Set each of these 4 bits to 1 to indicate being capable of receiving, set to 0 otherwise.