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Wireless LANs

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| LB189 D2.0 11af Comment Resolutions on TVHT-SIGB |
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* *Abstract: Resolutions of D2.0 comments on TVHT-SIGB (23.3.8.2.6): CIDs 67, 223, 267, 268, 269, 287, 345, 353, 370*

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| 67 | Osama Aboulmagd | 23.3.8.2.6 | 243.39 | For VHT-SIG-B, the length of the field changes depending on the channel bandwidth. What is the lengths of the VHT-SIG-B field for 2W and 4W channels? And what is the repetition pattern? | clarify | **Revised**  |
| 223 | Raja Banerjea | 23.3.8.2.6 | 243.41 | In the US TVHT could be deployed with 6, 6+6, 12, 12+12 MHz. However VHT-SIGB is defined for 20, 40, 80, 80+80 and 160 MHz. Based on my reading of the 11af specification, VHT-SIGB transmission uses the 40 MHz 11ac VHT-SIG-B and transmits over all the segments. Definition of VHT-SIGB for TVHT is incomplete in the draft, possibly add a transmit flow diagram for VHT-SIGB for 11af. | In the US TVHT could be deployed with 6, 6+6, 12, 12+12 MHz. However VHT-SIGB is defined for 20, 40, 80, 80+80 and 160 MHz. Based on my reading of the 11af specification, VHT-SIGB transmission uses the 40 MHz 11ac VHT-SIG-B and transmits over all the segments. Definition of VHT-SIGB for TVHT is incomplete in the draft, possibly add a transmit flow diagram for VHT-SIGB for 11af. | **Revised** |
| 267 | Fei Tong | 23.3.8.2.6 | 243.41 | If same SIGB definition is used for both single and double channel width per segment, for double channel width, the number of bits allocated to SIGB-length is shorter than its 80MHz counterpart. | re-design the SIG-B fields for more efficiency | **Revised** |
| 268 | Fei Tong | 23.3.8.2.6 | 243.41 | A simple calculation shows, the max Nss is 4 in 11af, therefore, the maximal length can be represented with 1 less bit than VHT counterpart. The SIGB definition can be defined more efficiently | re-design the SIG-B fields for more efficiency | **Revised** |
| 269 | Fei Tong | 23.3.8.2.6 | 243.41 | Lack of specification of SIG-B field coding and sub-carrier mapping processes | add specification on how the SIG-B fields are encoded, modulated and mapped to sub-carriers for various modes. | **Revised** |
| 287 | Mark Rison | 23.3.8.2.6 | 243.00 | If aPSDUMaxLength is 709920 octets (Table 23-18) then you only need 20 bits for the length | Copy Table 22-14 to clause 23 and adjust the Lengths according to what TVHT allows (including any restrictions for MU PPDUs), moving any surplus bits to Reserved | **Revised** |
| 345 | Shi Wei | 23.3.8.2.6 | 243.41 | The decription for TVHT-SIG-B is very unclear. It states that VHT-SIGB definition for 40MHz shall be used. However, there are more than 2 bandwidth modes in TVHT. I think something similar to Figure 22.20 in 11ac D3.0 which shows how bits are mapped for various bandwidth modes will be useful. | Please add further text in this subclause to describe TVHT-SIGB. | **Revised** |
| 353 | Xun Yang | 23.3.8.2.6 | 243.39 | For VHT-SIG-B, the length of the field changes depending on the channel bandwidth. What is the lengths of the VHT-SIG-B field for 2W and 4W channels? And what is the repetition pattern? | clarify | **Revised** |
| 370 | Lin Cai | 23.3.8.2.6 | 243.39 | For VHT-SIG-B, the length of the field is dependent on the channel bandwidth. It is not clear What is the lengths of the VHT-SIG-B field for 2W and 4W channels, and what is the repetition pattern? | Please clarify it. | **Revised** |

**Discussions***:* The current text regarding TVHT-SIGB is “The TVHT-SIG-B field for each frequency segment in any transmission mode is as defined in 22.3.8.2.6 (VHT-SIG-B definition) for 40 MHz bandwidth.” –This means that the 27 uncoded TVHT-SIGB bits are first repeated, and then encoded, interleaved and made into constellations as an 11ac 40MHz VHT-SIGB (refer to Figure 22-20).

If the current PPDU bandwidth spans more than one TV channels, the modulated TVHT-SIGB constellation points as described above are repeated in each TV channel.

Based on Table 22-14, there are 19 bits in VHT-SIGB LENGTH field in 40MHz in the case of SU packets, this covers PPDU length up to 2097148 octets, which is more than the value aPSDUMaxLength 709920 octets. Therefore we can have the same VHT-SIGB LENGTH field unchanged from 11ac VHTSIGB.

Agree with the commenters that this SIGB subclause need some further clarifications.

**Proposal: Revised for CIDs 67, 223, 267, 268, 269, 287, 345, 353, 370. The proposed editorial instructions are included in this document as shown below.**

*TGaf Editor: Pls make the following change in clause 23.3.8.2.6 in page 243 lines 41~42:*

**23.3.8.2.6 TVHT-SIG-B definition**

The TVHT-SIG-B field for each frequency segment in any transmission mode is as defined in 22.3.8.2.6 (VHT-SIG-B definition) for 40 MHz bandwidth.

The 27 TVHT-SIG-B bits are first repeated twice, and then BCC encoded, interleaved and made into constellations as described by Figure 22-20 and the corresponding text in 22.3.8.2.6 (VHT-SIG-B definition). If the channel bandwidth of the current PPDU is TVHT\_W, then the IDFT is conducted as described in 22.3.8.2.6 (VHT-SIG-B definition).

If the channel bandwidth of the current PPDU is larger than TVHT\_W, then the TVHT-SIG-B subcarriers as described above are repeated in each frequency segment, with appropriate phase rotation factors being applied as shown in Table 23-7(Transmission mode and ), before conducting IDFT.