IEEE P802.11
Wireless LANs

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| LB225 CR Sub-clause 28.4.3 |
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Abstract

This submission proposes resolutions of comments received from TGax LB225.

(The proposed change is based on TGax Draft 1.0.)

* CIDs: 3315, 3394, 3661, 3750, 4133, 4234, 9735, 10311 (8 CID)

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 TGax Draft. This introduction is not part of the adopted material.

***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 existing 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.***

| **CID** | **Page** | **Clause** | **Comment** | **Proposed Change** | **Resolution** |
| --- | --- | --- | --- | --- | --- |
| 3315 | 372.48 | 28.4.3 | Table 28-46 - HE PHY characteristics lists the aPSDUMaxLength set to 6,500,631 octets. It's not clear in the table or text what assumptions were made and how the length is calculated. | Add a NOTE at the bottom of Table 28-46 stating the assumptions and the calculation (Eq.) for determining the PSDU maximum. E.g., 1024-QAM 5/6 rate coding rate, LDPC, 160 MHz channel bandwidth, 8 spatial streams, LDPC. | Revised- Agree in principal. For clarification how to calculate a PSDUMaxLength, it is better to include the proposed NOTE. TGax editor makes changes as shown in the as specified in 11-17/0047r0. |
| 3394 | 372.48 | 28.4.3 | Table 28-46 - HE PHY characteristics lists the aPSDUMaxLength set to 6,500,631 octets. It's not clear in the table or text what assumptions were made and how the length is calculated. | Add a NOTE at the bottom of Table 28-46 stating the assumptions and the calculation (Eq.) for determining the PSDU maximum. E.g., 1024-QAM 5/6 rate coding rate, LDPC, 160 MHz channel bandwidth, 8 spatial streams, LDPC. | Revised- Agree in principal. It is duplicated comment with CID 3315. TGax editor makes changes as shown in the as specified in 11-17/0047r0. |
| 3661 | 372.48 | 28.4.3 | Table 28-46 - HE PHY characteristics lists the aPSDUMaxLength set to 6,500,631 octets. It's not clear in the table or text what assumptions were made and how the length is calculated. | Add a NOTE at the bottom of Table 28-46 stating the assumptions and the calculation (Eq.) for determining the PSDU maximum. E.g., 1024-QAM 5/6 rate coding rate, LDPC, 160 MHz channel bandwidth, 8 spatial streams, LDPC. | Revised- Agree in principal. It is duplicated comment with CID 3315. TGax editor makes changes as shown in the as specified in 11-17/0047r0. |
| 3750 | 372.48 | 28.4.3 | Table 28-46 - HE PHY characteristics lists the aPSDUMaxLength set to 6,500,631 octets. It's not clear in the table or text what assumptions were made and how the length is calculated. | Add a NOTE at the bottom of Table 28-46 stating the assumptions and the calculation (Eq.) for determining the PSDU maximum. E.g., 1024-QAM 5/6 rate coding rate, LDPC, 160 MHz channel bandwidth, 8 spatial streams, LDPC. | Revised- Agree in principal. It is duplicated comment with CID 3315. TGax editor makes changes as shown in the as specified in 11-17/0047r0. |
| 4133 | 372.48 | 28.4.3 | Table 28-46 - HE PHY characteristics lists the aPSDUMaxLength set to 6,500,631 octets. It's not clear in the table or text what assumptions were made and how the length is calculated. | Add a NOTE at the bottom of Table 28-46 stating the assumptions and the calculation (Eq.) for determining the PSDU maximum. E.g., 1024-QAM 5/6 rate coding rate, LDPC, 160 MHz channel bandwidth, 8 spatial streams, LDPC. | Revised- Agree in principal. It is duplicated comment with CID 3315. TGax editor makes changes as shown in the as specified in 11-17/0047r0. |
| 4234 | 372.48 | 28.4.3 | Table 28-46 - HE PHY characteristics lists the aPSDUMaxLength set to 6,500,631 octets. It's not clear in the table or text what assumptions were made and how the length is calculated. | Add a NOTE at the bottom of Table 28-46 stating the assumptions and the calculation (Eq.) for determining the PSDU maximum. E.g., 1024-QAM 5/6 rate coding rate, LDPC, 160 MHz channel bandwidth, 8 spatial streams, LDPC. | Revised- Agree in principal. It is duplicated comment with CID 3315. TGax editor makes changes as shown in the as specified in 11-17/0047r0. |
| 9735 | 372.36 | 28.4.3 | aRxPHYStartDelay is missing. | Add the following aRxPHYStartDelay value into Table 28-46.- 32 us for HE SU PPDU and HE trigger-based PPDU- 40 us for HE ER SU PPDU- 96 us for HE MU PPDU | Revised- Agree in principal. aRxPHYStartDelay values shall be defined. TGax editor makes changes as shown in the as specified in 11-17/0047r0. |
| 10311 | 372.45 | 28.4.3 | aCCAMidTime =25usec, and it is the exactly same as 11ac.Due to longer OFDM symbol in 11ax, I don't think we can expect reliable mid packet detect within 25usec.In 11ac, 25usec can contain 6 OFDM symbols and 0.8u\*6=4.8usec can be used for auto-correlation.To have a reliable detection similar to 11ac, we need time of max{(0.8u+12.8u)\*6, (1.6u+12.8u)\*2, (3.2u+12.8u)\*1} = 81.6usec. | Replace 25usec with 81.6usec for aCCAMidTime.To make such change, current description for 28.3.17.6.4 would become invalid.Use two separate "aCCAMidTIme"s, i.e., one is for 11ax having longer OFDM symbol such as 81.6usec as mentioned above,And the other is conventional value of 25usec for 11a/g/n/ac. | Rejected- aCCAMidTime is used for a secondary channel CCA.And, when the backoff counter value of the resumed backoff timer is zero, the secondary channel CCA shall be performed within the PIFS or DIFS or AIFS.The proposed aCCAMidTime value does not meet this requirement.  |

**28.4.3 HE PHY**

***TGax editor: change the sub-clause 28.4.3 as the following:***

**Table 28-46—HE PHY characteristics**

|  |  |
| --- | --- |
| **Characteristic** | **Value** |
| aTxPHYDelay | Implementation dependent |
| aRxPHYDelay | Implementation dependent |
| aCCAMidTime | 25 μs |
| aPPDUMaxTime | 5.484 ms |
| aPSDUMaxLength | 6 500 631 octets (see NOTE1) |
| aRxPHYStartDelay | 32 μs for HE SU PPDU and HE trigger-based PPDU,40 μs for HE ER SU PPDU,96 μs for HE MU PPDU. (#9735) |
| NOTE 1—This is the maximum length in octets for an HE SU PPDU with a bandwidth of 160 MHz or 80+80 MHz using 2x996 RU, HE-MCS 11, 8 spatial streams, 0.8 μs GI duration, 1x LTF, LDPC coding, 0 μs duration of the Packet Extension, pre-FEC padding factor value of 4, and limited by 398 possible data symbols in aPPDUMaxTime. This is the maximum PSDU length a HE PHY could support assuming no restrictions in MAC. See 10.3.2 and 9.2.4.7.1 for additional restrictions on the maximum number of octets the MAC could support. (#3315) |