IEEE P802.11  
Wireless LANs

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| |  |  |  |  |  | | --- | --- | --- | --- | --- | | CR on Punctured Non-HT Duplicate PPDU | | | | | | Date: 2019-5-10 | | | | | | Author(s): | | | | | | Name | Affiliation | Address | Phone | email | | Youhan Kim | Qualcomm |  |  | youhank@qti.qualcomm.com | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |  |  |  |  |  | |

Abstract

This submission proposes resolutions for the following comments from the letter ballot on P802.11ax D4.0:

20989, 21572, 21385

NOTE – Set the Track Changes Viewing Option in the MS Word to “All Markup” to clearly see the proposed text edits.

**Revision History:**

R0: Initial version.

R1: Updated during May 2019 IEEE meeting.

R2: Updated resolution to CID 21572.

R3: Updated during May 2019 IEEE meeting.

# CID 20989, 21572

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| **CID** | **Clause** | **Page.Line** | **Comment** | **Proposed Change** |
| 20989 | 21.3.10.12 | 293.09 | A similar change in the HT PHY clause is needed for non-HT duplicate transmissions (since an HE STA is not necessarily a VHT STA) | As it says in the comment |
| 21572 | 21.3.10.12 | 293.22 | TXVECTOR parameter in Clause 21 does not have INACTIVE\_SUBCHANNELS. Why are we modifying this equation in Clause 21? | Delete this change in Clause 21. Instead, create equation for non-HT in Clause 27. |

**Proposed Resolution: CID 20989**

**Rejected**.

A non-HE VHT STA does not support punctured non-HT duplicate PPDU transmissions, hence there is no need to define punctured non-HT duplicate PPDU in clause 21. Also, PHY ad-hoc held a strawpoll during the March 2019 IEEE meeting, which indicated that the group prefers to define the equation for punctured non-HT duplicate PPDUs in clause 27, not clause 21 (11-19/0457r2, Straw-poll 3). Based on this, the proposed text updates in 11-19/0827 moves the equation for punctured non-HT duplicate PPDUs to 27.3.13. Hence, there is no need to make similar change in the HT PHY clause.

**Proposed Resolution: CID 21572**

**Revised**.

A non-HE VHT STA does not support punctured non-HT duplicate PPDU transmissions, hence there is no need to define punctured non-HT duplicate PPDU in clause 21. Also, PHY ad-hoc held a strawpoll during the March 2019 IEEE meeting, which indicated that the group prefers to define the equation for punctured non-HT duplicate PPDUs in clause 27, not clause 21 (11-19/0457r2, Straw-poll 3). Proposed text updates in 11-19/0827 moves the equation to 27.3.13.

Instruction to Editor: Implement the proposed text updates for CID 21572 in 11-19/0827r3.

**Proposed Text Updates: CID 21572**

*TGax Editor: Delete clause 21 from D4.1.*

*TGax Editor: Add the following bullet at D4.1 P475L35.*

– See 27.3.13 for the modulation equation for Non-HT duplicate transmission.

*TGax Editor: Update 27.3.13 in D4.1 as shown below.*

* + 1. Non-HT duplicate transmission

If the TXVECTOR parameter FORMAT is NON\_HT and the TXVECTOR parameter NON\_HT\_MODULATION is NON\_HT\_DUP\_OFDM, the transmitted PPDU is a non-HT duplicate. Non-HT duplicate transmission is used to transmit to non-HT OFDM STAs, HT STAs, VHT STAs and HE STAs that may be present in a part of a 40 MHz, 80 MHz, or 160 MHz channel (see Table 21-2). The RL-SIG, HE-SIG-A, HE-SIG-B, HE-STF, and HE-LTF fields are not transmitted. The L-STF and L-LTF fields shall be transmitted in the same way as in the HE transmission. The L-SIG field shall be transmitted in the same way as in the HE transmission, with the following exceptions:

* The Rate and Length fields shall follow 17.3.4
* The four additional subcarriers at indices ±27 and ±28 are not modulated (no energy)

In a 40 MHz non-HT duplicate transmission, the Data field shall be as defined by Equation (19-61).

For 80 MHz and 160 MHz non-HT duplicate transmissions, the Data field shall be as defined by Equation (27-x1).

 (27-x1)

*Note to TGax Editor: Above Equation (27-x1) is identical to Equation (21-100) in D4.1.*

where

 and  are defined in 21.3.8.2.4

 and  are defined in 17.3.5.10

 is defined in Equation (21-26)

 is defined in Equation (21-16) and Equation (21-17)

 represents the cyclic shift for transmitter chain  with a value given in Table 21-10

 has the value given in Table 27-16

INACTIVE\_SUBCHANNELS[x] is bit x of the TXVECTOR parameter INACTIVE\_SUBCHANNELS

if present, and is 0, otherwise.In a noncontiguous 80+80 MHz non-HT duplicate transmission, data transmission in each frequency segment shall be as defined for an 80 MHz non-HT duplicate transmission in Equation (27-x1).

For each non-HT duplicate PPDU transmission that is a preamble punctured PPDU, each punctured 20 MHz subchannel is indicated as punctured by including the value of 01110001 in the 8 bits of the TXVECTOR parameter RU\_ALLOCATION corresponding to the 242-tone RU that is most closely aligned with the punctured 20 MHz subchannel. Each 20 MHz subchannel that is not punctured is indicated as such by including the value of 11000000 in the 8 bits of the TXVECTOR parameter RU\_ALLOCATION corresponding to the 242-tone RU that is most closely aligned with that 20 MHz subchannel.

# CID 21385

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| **CID** | **Clause** | **Page.Line** | **Comment** | **Proposed Change** |
| 21385 | 27.2.5 | 468.24 | INACTIVE\_SUBCHANNELS doesn't appear to be part of TXVECTOR | Add to TXVECTOR |

**Proposed Resolution: CID 21385**

**Revised**.

Proposed text updates in 11-19/0827 adds the TXVECTOR parameter INACTIVE\_SUBCHANNELS.

Instruction to Editor: Implement the proposed text updates for CID 21385 in 11-19/0827r3.

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| Table 27-1 – TXVECTOR and RXVECTOR parameters | | | | |
| Parameter | Condition | Value | TXVECTOR | RXVECTOR |
| INACTIVE\_SUBCHANNELS | FORMAT is NON\_HT and NON\_HT\_MODULATION is NON\_HT\_DUP\_OFDM, or  FORMAT is HE\_SU and PSDU\_LENGTH is 0 | Indicates whether a 20 MHz subchannel is punctured.  INACTIVE\_SUBCHANNELS is an 8-bit bitmap with an encoding that is the same as that for the Disallowed Subchannel Bitmap subfield (see 9.3.1.19). | O | N |
| Otherwise | Not present | | |

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