IEEE P802.11  
Wireless LANs

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| Proposed Draft Text: Effect of CH\_BANDWIDTH parameter on PPDU format | | | | |
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Abstract

This submission shows

* Draft of 36.2.5 (Effect of CH\_BANDWIDTH parameter on PPDU format)
* The baseline document is 11be draft 0.4.

Revisions:

* Rev 0: Initial version of the document.
* Rev 1: TBD filled based on the feedback on the teleconference call.
  + In INACTIVE\_SUBCHANNELS parameter in Non-HT duplicate transmission, puncturing patterns include both non-OFDMA and OFDMA cases altogether.
* Rev 2: editorial update
* Rev 3: delete the description of the parameter INACTIVE\_SUBCHANNELS.
* Rev 4: editorial update

***Discussion***

The parameter INACTIVE\_SUBCHANNELS is the indication of which 20MHz subchannels are punctured and is conveyed from the MAC to the PHY through TXVECTOR.

* In 11ax, the parameter INACTIVE\_SUBCHANNELS may be present in the TXVECTOR of a non-HT duplicate PPDU that carries an HE NDP Announcement frame or of an HE sounding PPDU.
* In 11be, there is a CR document (21/455) containing the concept below.
  + The indication of which subchannels are punctured in a Control, Data or Management frame that is carried in a non-HT duplicate PPDU is conveyed from the MAC to the PHY through the TXVECTOR parameter INACTIVE\_SUBCHANNELS.
  + The parameter INACTIVE\_SUBCHANNELS may be present in the TXVECTOR of a non-HT duplicate PPDU or EHT PPDU that carries a Control, Data or Management frame.

In 11be, the parameter INACTIVE\_SUBCHANNELS is a TXVECTOR which is set by MAC and it is applicable to different types of frames in non-HT duplicate PPDU and EHT PPDU. So it is better to leave simple instructions in PHY part on how to set it by referring the corresponding MAC subclause, then the parameter INACTIVE\_SUBCHANNELS will be described based on MAC decision.

If this document is agreed, the corresponding subclause 27.2.5 (Effects of CH\_BANDWIDTH parameter on PPDU format) should be updated as well in 11me.

**36.2.5 Effect of CH\_BANDWIDTH parameter on PPDU format**

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Table 36-3 (Interpretation of FORMAT, NON\_HT\_MODULATION and CH\_BANDWIDTH parameters) shows the valid combinations of the FORMAT, NON\_HT\_MODULATION(#24306) and CH\_BANDWIDTH parameters and the corresponding PPDU format. Other combinations are reserved.

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| Table 36-3 Interpretation of FORMAT, NON\_HT\_MODULATION(#24306) and CH\_BANDWIDTH parameters | | | | |
| FORMAT | NON\_HT\_  MODULATION | CH\_BANDWIDTH |  | PPDU format |
| EHT\_MU, EHT\_TB | N/A | CBW20 |  | The STA transmits an EHT PPDU of 20 MHz bandwidth. If the BSS bandwidth is wider than 20 MHz, then the transmission shall use the primary 20 MHz channel. |
| EHT\_MU, EHT\_TB | N/A | CBW40 |  | The STA transmits an EHT PPDU of 40 MHz bandwidth. If the BSS bandwidth is wider than 40 MHz, then the transmission shall use the primary 40 MHz channel. |
| EHT\_MU, EHT\_TB | N/A | CBW80 |  | The STA transmits an EHT PPDU of 80 MHz bandwidth. If the BSS bandwidth is wider than 80 MHz, then the transmission shall use the primary 80 MHz channel. |
| EHT\_MU, EHT\_TB | N/A | CBW160 |  | The STA transmits an EHT PPDU of 160 MHz bandwidth. If the BSS bandwidth is wider than 160 MHz, then the transmission shall use the primary 160 MHz channel. |
| EHT\_MU, EHT\_TB | N/A | CBW320 |  | The STA transmits an EHT PPDU of 320 MHz bandwidth. |
| NON\_HT | OFDM | CBW20 |  | See Table 21-2 (Interpretation of FORMAT, NON\_HT\_MODULATION, CH\_BANDWIDTH, and  CH\_OFFSET parameters). |
| NON\_HT | NON\_HT\_DUP\_OFDM | CBW40 |  | See Table 21-2 (Interpretation of FORMAT, NON\_HT\_MODULATION, CH\_BANDWIDTH, and  CH\_OFFSET parameters). |
| NON\_HT | NON\_HT\_DUP\_OFDM | CBW80 |  | If INACTIVE\_SUBCHANNELS is not present, see Table 21-2 (Interpretation of FORMAT, NON\_HT\_MODULATION, CH\_BANDWIDTH, and  CH\_OFFSET parameters).  If INACTIVE\_SUBCHANNELS is present (See 35.2.1.2.2 (INACTIVE\_SUBCHANNELS) and 26.11.7 (INACTIVE\_SUBCHANNELS and RU\_ALLOCATION)), the STA transmits a punctured NON-HT PPDU of 80 MHz bandwidth. If the BSS bandwidth is wider than 80 MHz, then the transmission shall use the primary 80 MHz channel. Primary 20 MHz is not punctured. |
| NON\_HT | NON\_HT\_DUP\_OFDM | CBW160 |  | If INACTIVE\_SUBCHANNELS is not present, see Table 21-2 (Interpretation of FORMAT, NON\_HT\_MODULATION, CH\_BANDWIDTH, and  CH\_OFFSET parameters).  If INACTIVE\_SUBCHANNELS is present (See 35.2.1.2.2 (INACTIVE\_SUBCHANNELS) amd 26.11.7 (INACTIVE\_SUBCHANNELS and RU\_ALLOCATION)), the STA transmits a punctured NON-HT PPDU of 160 MHz bandwidth. If the BSS bandwidth is wider than 160 MHz, then the transmission shall use the primary 160 MHz channel. Primary 20 MHz is not punctured. |
| NON\_HT | NON\_HT\_DUP\_OFDM | CBW320 |  | If INACTIVE\_SUBCHANNELS is not present, the STA transmits a NON-HT PPDU of 320 MHz bandwidth using sixteen adjacent 20 MHz channels as defined in 36.3.15 (Non-HT  duplicate transmission).  If INACTIVE\_SUBCHANNELS is present (See 35.2.1.2.2 (INACTIVE\_SUBCHANNELS)), the STA transmits a punctured NON-HT PPDU of 320 MHz bandwidth. Primary 20 MHz is not punctured. |
| HT\_MF, HT\_GF, VHT, HE\_SU, HE\_MU, HE\_ER\_SU, HE\_TB | See Table 27-3 (Interpretation of FORMAT, NON\_HT\_MODULATION and CH\_BANDWIDTH parameters), Table 21-2 (Interpretation of FORMAT, NON\_HT\_MODULATION, CH\_BANDWIDTH, and CH\_OFFSET parameters), and Table 19-2 (Interpretation of FORMAT, CH\_BANDWIDTH and CH\_OFFSET parameters) | | | |
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