### **IEEE P802.11 Wireless LANs**

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| PDT Additional EHT PHY Capability Signaling | | | | |
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**Introduction**

This document provides proposed draft text for Subclause 9.4.2.295c.1 EHT PHY Capabilities Information field, in IEEE 802.11be D0.5.

***TGbe editor: Please add the following rows to the end of Table 9-322ao—Subfield of the EHT PHY Capabilities Information field as shown below:***

|  |  |  |
| --- | --- | --- |
| **Subfield** | **Definition** | **Encoding** |
| Non-OFDMA UL MU-MIMO  (BW 80 MHz) | For an AP, indicates support for non-OFDMA UL MU-MIMO reception of an EHT TB PPDU, for PPDU bandwidths of 20, 40 and 80 MHz (UL MU-MIMO). | For an AP STA  Set to 0 if not supported.  Set to 1 if supported.  If the maximum number of spatial streams indicated for reception, for any MCS, in the Supported MCS and Nss Set Field, for (BW 80 MHz, Excluding 20 MHz-Only STAs) is greater or equal to four, then set to 1.  Reserved for a non-AP STA. |
| Non-OFDMA UL MU-MIMO  (BW = 160 MHz) | For an AP, indicates support for non-OFDMA UL MU-MIMO reception of an EHT TB PPDU, for PPDU with bandwidth of 160 MHz (UL MU-MIMO). | For an AP STA  Set to 0 if not supported.  Set to 1 if supported.  If the maximum number of spatial streams indicated for reception, for any MCS, in the Supported MCS and Nss Set Field, for (BW = 160 MHz) is greater or equal to four, then set to 1.  Reserved for a non-AP STA. |
| Non-OFDMA UL MU-MIMO  (BW = 320 MHz) | For an AP, indicates support for non-OFDMA UL MU-MIMO reception of an EHT TB PPDU, for PPDU with bandwidth of 320 MHz (UL MU-MIMO). | For an AP STA  Set to 0 if not supported.  Set to 1 if supported.  If the maximum number of spatial streams indicated for reception, for any MCS, in the Supported MCS and Nss Set Field, for (BW = 320 MHz) is greater or equal to four, then set to 1.  Reserved for a non-AP STA. |
| MU Beamformer  (BW 80 MHz) | For an AP, indicates the support for non-OFDMA DL MU-MIMO transmission and the required MU sounding, for PPDU bandwidths of 20, 40 and 80 MHz. | For an AP STA  Set to 0 if not supported.  Set to 1 if supported.  If the maximum number of spatial streams indicated for transmission, for any MCS, in the Supported MCS and Nss Set Field, for (BW 80 MHz, Excluding 20 MHz-Only STA) is greater or equal to four, then set to 1.  Reserved for a non-AP STA. |
| MU Beamformer  (BW = 160 MHz) | For an AP, indicates the support for non-OFDMA DL MU-MIMO transmission and the required MU sounding, for PPDU bandwidth of 160 MHz. | For an AP STA  Set to 0 if not supported.  Set to 1 if supported.  If the maximum number of spatial streams indicated for transmission, for any MCS, in the Supported MCS and Nss Set Field, for (BW = 160 MHz) is greater or equal to four, then set to 1.  Reserved for a non-AP STA |
| MU Beamformer  (BW = 320 MHz) | For an AP, indicates the support for non-OFDMA DL MU-MIMO transmission and the required MU sounding, for PPDU bandwidth of 320 MHz. | For an AP STA  Set to 0 if not supported.  Set to 1 if supported.  If the maximum number of spatial streams indicated for transmission, for any MCS, in the Supported MCS and Nss Set Field, for (BW = 320 MHz) is greater or equal to four, then set to 1.  Reserved for a non-AP STA |

***TGbe editor: Please modify the MU Beamformer entry of Table 9-322ao — Subfields of the EHT PHY Capabilities Information field, as shown below:***

|  |  |  |
| --- | --- | --- |
| **Subfield** | **Definition** | **Encoding** |
|  |  |  |
| SU Beamformer | Indicates support for operation as an SU beamformer. | Set to 0 if not supported.  Set to 1 if supported.  NOTE— Set to 1 if any of following subfields, MU Beamformer (BW <= 80 MHz), MU Beamformer (BW = 160 MHz), MU Beamformer (BW = 320 MHz), is 1 |
| Max Nc | Indicates the maximum supported *Nc* for an EHT compressed beamforming/CQI report. | If the SU Beamformee subfield is 1:  Set to the maximum supported *Nc* for an EHT compressed beamforming/CQI report minus 1.  The maximum value of this field is 7.  Reserved if the SU Beamformee subfield is 0. |

***TGbe editor: Please modify Figure 9-788el—EHT PHY Capabilities Information field format as shown below:***

**Table 9-F1 EHT PHY Capabilities Information field format**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | B0 | B1 | B2 | B3 | B4 |
|  | Reserved | Support for 320 MHz in  6 GHz | Support for 242-tone RU in BW wider than 20 MHz | NDP With 4x EHT-LTF And 3.2 µs GI | Partial Bandwidth UL  MU-MIMO |
| Bits: | 1 | 1 | 1 | 1 | 1 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | B5 | B6 |  | B7 B9 | B10 B12 | B13 B15 | B16 B18 |
|  | SU Beamformer | SU Beamformee |  | Beamformee SS  (≤ 80 MHz) | Beamformee SS  (=160 MHz) | Beamformee SS  (= 320 MHz) | Number Of Sounding Dimensions (≤ 80 MHz) |
| Bits: | 1 | 1 |  | 3 | 3 | 3 | 3 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | B19  B21 | B22 B24 | B25 | B26 | B27 | B28 | B29 | B30 |
|  | Number Of Sounding Dimensions (=160 MHz) | Number Of Sounding Dimensions (=320 MHz) | Ng = 16 SU Feedback | Ng = 16 MU Feedback | Codebook Size (ϕ, ψ) = {4, 2} SU Feedback | Codebook Size (ϕ, ψ) = {7, 5} MU Feedback | Triggered SU Beamforming Feedback | Triggered MU Beamforming Feedback |
| Bits: | 3 | 3 | 1 | 1 | 1 | 1 | 1 | 1 |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | B31 | B32 | B33 | B34 | B35 | B36 B39 | B40 | B41 | B42 |
|  | Triggered CQI Feedback | Partial Bandwidth DL  MU-MIMO | PSR-based SR Support | Power Boost Factor Support | EHT MU PPDU With 4x HE-LTF And 0.8 µs GI | Max Nc | Non-Triggered CQI Feedback | Tx 1024-QAM and 4096-QAM < 242-tone RU Support | Rx 1024-QAM and 4096-QAM < 242-tone RU Support |
| Bits: | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 | 1 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | B43 | B44    B45 | B46 B50 | B51 B54 | B55 | B56 |  |
|  | PPE Thresholds Present | Common Nominal Packet Padding | Maximum number of supported EHT-LTFs | Support for  MCS 15 | Support of EHT-DUP in 6 GHz | Support for 20 MHz operating STA receiving NDP with wider Bandwidth |  |
| Bits: | 1 | 2 | 5 | 4 | 1 | 1 |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | B57 | B58 | B59 | B60 | B61 | B62 | B63 |
|  | Non-OFDMA  UL MU-MIMO  (BW ≤ 80 MHz) | Non-OFDMA  UL MU-MIMO  (BW = 160 MHz) | Non-OFDMA  UL MU-MIMO  (BW = 320 MHz) | MU Beamformer  (BW 80 MHz) | MU Beamformer  (BW = 160 MHz) | MU Beamformer  (BW = 320 MHz) | Reserved |
| Bits: | 1 | 1 | 1 | 1 | 1 | 1 | 1 |