IEEE P802.11  
Wireless LANs

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| |  |  |  |  |  | | --- | --- | --- | --- | --- | | Proposed Draft Text EHT PLME | | | | | | Date: 2020-08-24 | | | | | | Author(s): | | | | | | Name | Affiliation | Address | Phone | email | | Youhan Kim | Qualcomm |  |  | youhank@qti.qualcomm.com | |

Abstract

This document contains proposed draft text for EHT PLME.

**Revision History:**

R0: Initial version.

33.X1 EHT PLME

33.X1.1 PLME\_SAP sublayer management primitives

Table 33-X1 (EHT PHY MIB attributes) lists the MIB attributes that may be accessed by the PHY entities and the intralayer of higher level LMEs. These attributes are accessed via the PLME-GET, PLME-SET, PLME-RESET, and PLME-CHARACTERISTICS primitives defined in 6.5 (PLME SAP interface).

* PHY MIB

EHT PHY MIB attributes are defined in Annex C with specific values defined in Table 33-X1 (EHT PHY MIB attributes). The “Operational semantics” column in Table 33-X1 (EHT PHY MIB attributes) contains two types: static and dynamic.

* Static MIB attributes are fixed and cannot be modified for a given PHY implementation.
* Dynamic MIB attributes are interpreted according to the MAX-ACCESS field of the MIB attribute. If MAX-ACCESS is equal to read-only, the MIB attribute value may be updated by the PLME and read from the MIB attribute by management entities. if MAX-ACCESS is equal to read-write, the MIB attribute may be read and written by management entities.

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| --- | --- | --- |
| Table 33-X1 - EHT PHY MIB attributes | | |
| Managed object | Default value/range | Operational semantics |
| **dot11PHYOperationTable** | | |
| dot11PHYType | eht | Static |
| **dot11PHYTxPowerTable** | | |
| dot11NumberSupportedPowerLevelsImplemented | Implementation dependent | Static |
| dot11TxPowerLevel1 | Implementation dependent | Static |
| dot11TxPowerLevel2 | Implementation dependent | Static |
| dot11TxPowerLevel3 | Implementation dependent | Static |
| dot11TxPowerLevel4 | Implementation dependent | Static |
| dot11TxPowerLevel5 | Implementation dependent | Static |
| dot11TxPowerLevel6 | Implementation dependent | Static |
| dot11TxPowerLevel7 | Implementation dependent | Static |
| dot11TxPowerLevel8 | Implementation dependent | Static |
| dot11CurrentTxPowerLevel | Implementation dependent | Static |
| dot11TxPowerLevelExtended | Implementation dependent | Static |
| dot11CurrentTxPowerLevelExtended | Implementation dependent | Static |
| **dot11PHYOFDMTable** | | |
| dot11TwentyMHzOperationImplemented | false/Boolean | Static |
| dot11ChannelStartingFactor | Implementation dependent | Dynamic |
| **dot11PHYHTTable** | | |
| dot11CurrentPrimaryChannel | Implementation dependent | Dynamic |
| dot11CurrentSecondaryChannel | Implementation dependent | Dynamic |
| dot11FortyMHzOperationImplemented | false/Boolean | Static |
| dot11FortyMHzOperationActivated | false/Boolean | Dynamic |
| dot11NumberOfSpatialStreamsImplemented | Implementation dependent | Static |
| dot11NumberOfSpatialStreamsActivated | Implementation dependent | Dynamic |
| dot11HTGreenfieldOptionImplemented | false/Boolean | Static |
| dot11HTGreenfieldOptionActivated | false/Boolean | Dynamic |
| dot11ShortGIOptionInTwentyImplemented | false/Boolean | Static |
| dot11ShortGIOptionInTwentyActivated | false/Boolean | Dynamic |
| dot11ShortGIOptionInFortyImplemented | false/Boolean | Static |
| dot11ShortGIOptionInFortyActivated | false/Boolean | Dynamic |
| dot11LDPCCodingOptionImplemented | false/Boolean | Static |
| dot11LDPCCodingOptionActivated | false/Boolean | Dynamic |
| dot11TxSTBCOptionImplemented | false/Boolean | Static |
| dot11TxSTBCOptionActivated | false/Boolean | Dynamic |
| dot11RxSTBCOptionImplemented | false/Boolean | Static |
| dot11RxSTBCOptionActivated | false/Boolean | Dynamic |
| dot11BeamFormingOptionImplemented | false/Boolean | Static |
| dot11BeamFormingOptionActivated | false/Boolean | Dynamic |
| **dot11PHYVHTTable** | | |
| dot11CurrentChannelWidth | Implementation dependent | Dynamic |
| dot11CurrentChannelCenterFrequencyIndex0 | Implementation dependent | Dynamic |
| dot11CurrentChannelCenterFrequencyIndex1 | Implementation dependent | Dynamic |
| dot11VHTChannelWidthOptionImplemented | Implementation dependent | Static |
| dot11EightyMHzOperationImplemented | false/Boolean | Static |
| dot11EightyMHzOperationActivated | false/Boolean | Dynamic |
| dot11VHTShortGIOptionIn80Implemented | false/Boolean | Static |
| dot11VHTShortGIOptionIn80Activated | false/Boolean | Dynamic |
| dot11VHTShortGIOptionIn160and80p80Implemented | false/Boolean | Static |
| dot11VHTShortGIOptionIn160and80p80Activated | false/Boolean | Dynamic |
| dot11VHTLDPCCodingOptionImplemented | false/Boolean | Static |
| dot11VHTLDPCCodingOptionActivated | false/Boolean | Dynamic |
| dot11VHTTxSTBCOptionImplemented | false/Boolean | Static |
| dot11VHTTxSTBCOptionActivated | false/Boolean | Dynamic |
| dot11VHTRxSTBCOptionImplemented | false/Boolean | Static |
| dot11VHTRxSTBCOptionActivated | false/Boolean | Dynamic |
| dot11VHTMaxNTxChainsImplemented | Implementation dependent | Static |
| dot11VHTMaxNTxChainsActivated | Implementation dependent | Dynamic |
| **dot11TransmitBeamformingConfigTable** | | |
| dot11ReceiveStaggerSoundingOptionImplemented | false/Boolean | Static |
| dot11TransmitStaggerSoundingOptionImplemented | false/Boolean | Static |
| dot11ReceiveNDPOptionImplemented | false/Boolean | Static |
| dot11TransmitNDPOptionImplemented | false/Boolean | Static |
| dot11ImplicitTransmitBeamformingOptionImplemented | false/Boolean | Static |
| dot11CalibrationOptionImplemented | Implementation dependent | Static |
| dot11ExplicitCSITransmitBeamformingOptionImplemented | false/Boolean | Static |
| dot11ExplicitNonCompressedBeamformingMatrixOptionImplemented | false/Boolean | Static |
| dot11ExplicitTransmitBeamformingCSIFeedbackOptionImplemented | Implementation dependent | Static |
| dot11ExplicitNoncompressedBeamformingFeedbackOptionImplemented | Implementation dependent | Static |
| dot11ExplicitCompressedBeamformingFeedbackOptionImplemented | Implementation dependent | Static |
| dot11NumberBeamFormingCSISupportAntenna | Implementation dependent | Static |
| dot11NumberNonCompressedBeamformingMatrixSupportAntenna | Implementation dependent | Static |
| dot11NumberCompressedBeamformingMatrixSupportAntenna | Implementation dependent | Static |
| **dot11VHTTransmitBeamformingConfigTable** | | |
| dot11VHTSUBeamformeeOptionImplemented | false/Boolean | Static |
| dot11VHTSUBeamformerOptionImplemented | false/Boolean | Static |
| dot11VHTMUBeamformeeOptionImplemented | false/Boolean | Static |
| dot11VHTMUBeamformerOptionImplemented | false/Boolean | Static |
| dot11VHTNumberSoundingDimensions | Implementation dependent | Static |
| dot11VHTBeamformeeNTxSupport | Implementation dependent | Static |
| **dot11PHYHETable** | | |
| dot11HECurrentChannelWidthSet | Implementation dependent | Dynamic |
| dot11HEPuncturedPreambleRxImplemented | Implementation dependent | Static |
| dot11HEPuncturedSoundingOptionImplemented | Implementation dependent | Static |
| dot11HEDeviceClass | Implementation dependent | Static |
| dot11HELDPCCodingInPayloadImplemented | false/Boolean | Static |
| dot11HESUPPDUwith1xHELTFand0point8GIlmplemented | false/Boolean | Static |
| dot11HESUPPDUandHEMUPPDUwith4xHELTFand0point8GIlmplemented | false/Boolean | Static |
| dot11HEERSUPPDUwith4xHELTFand0point8GIImplemented | false/Boolean | Static |
| dot11HEERSUPPDUwith1xHELTFand0point8GIImplemented | false/Boolean | Static |
| dot11HEMidambleRxMaxNSTS | false/Boolean | Dynamic |
| dot11HENDPwith4xHELTFand3point2GIImplemented | false/Boolean | Static |
| dot11HESTBCTxLessThanOrEqualTo80Implemented | false/Boolean | Static |
| dot11HESTBCRxLessThanOrEqualTo80Implemented | false/Boolean | Static |
| dot11HESTBCTxGreaterThan80Implemented | false/Boolean | Static |
| dot11HESTBCRxGreaterThan80Implemented | false/Boolean | Static |
| dot11HEDopplerTxImplemented | false/Boolean | Static |
| dot11HEDopplerRxImplemented | false/Boolean | Static |
| dot11HEDCMImplemented | Implementation dependent | Static |
| dot11HEFullBWULMUMIMOImplemented | false/Boolean | Static |
| dot11HEPartialBWULMUMIMOImplemented | false/Boolean | Static |
| dot11HEPartialBWDLMUMIMOImplemented | false/Boolean | Static |
| dot11HEULMUPayloadImplemented | false/Boolean | Static |
| dot11HEPSRbasedSRSupportImplemented | false/Boolean | Static |
| dot11HEPowerBoostFactorImplemented | false/Boolean | Static |
| dot11HEPartialBWERSUPayloadImplemented | false/Boolean | Static |
| **dot11HETransmitBeamformingConfigTable** | | |
| dot11HESUBeamformerOptionImplemented | false/Boolean | Static |
| dot11HESUBeamformeeOptionImplemented | false/Boolean | Static |
| dot11HEMUBeamformerOptionImplemented | false/Boolean | Static |
| dot11HEBeamformeeSTSSupportLessThanOrEqualTo80 | Implementation dependent | Static |
| dot11HEBeamformeeSTSSupportGreaterThan80 | Implementation dependent | Static |
| dot11HENumberSoundingDimensionsLessThanOrEqualTo80 | Implementation dependent | Static |
| dot11HENumberSoundingDimensionsGreaterThan80 | Implementation dependent | Static |
| dot11HENG16SUFeedbackSupport | false/Boolean | Static |
| dot11HENG16MUFeedbackSupport | false/Boolean | Static |
| dot11HECodebookSizePhi4Psi2SUFeedbackSupport | false/Boolean | Static |
| dot11HECodebookSizePhi7Psi5MUFeedbackSupport | false/Boolean | Static |
| dot11HETriggeredSUBeamformingFeedbackImplemented | false/Boolean | Static |
| dot11HETriggeredMUBeamformingFeedbackImplemented | false/Boolean | Static |
| dot11HETriggeredCQIFeedbackSupportImplemented | false/Boolean | Static |
| **dot11PHYEHTTable** | | |
| dot11EHTCurrentChannelWidthSet | Implementation dependent | Dynamic |
| **dot11EHTTransmitBeamformingConfigTable** | | |
|  |  |  |

33.X1.3 TXTIME and PSDU\_LENGTH calculation

*Editor’s Note: This subclause does not take into account STBC or midamble as there is no mention of them in the Specification Framework Document at this point.*

The value of the TXTIME parameter returned by the PLME-TXTIME.confirm primitive shall be calculated for an EHT PPDU using Equation (33-X1).

 (33-X1)

where

 is defined as in Equation TBD and *SignalExtension* takes the value of aSignalExtension as defined in Table 27-55 (HE PHY characteristics).

For an EHT PPDU using BCC encoding, the total number of data OFDM symbols, *NSYM*, is given by TBD.

For an EHT PPDU using LDPC encoding, the total number of data OFDM symbols, *NSYM*, is given by TBD.

*TPE* is given in 33.X2 (Packet extension).

The value of the PSDU\_LENGTH parameter returned in the PLME-TXTIME.confirm primitive for an EHT PPDU carrying a single user or EHT TB PPDU is calculated using Equation (33-X2).

 (33-X2)

where

*NSYM,init* is given by TBD

*NDBPS* is given in 33.X3 (Parameters for EHT-MCSs)

*NDBPS,last,init* is given by TBD

The value of the PSDU\_LENGTH parameter for user *u* returned in the PLME-TXTIME.confirm primitive for an EHT PPDU carrying multiple users calculated using Equation (33-X3) and Equation (33-X4) for users using BCC and LDPC, respectively.

 (33-X3)

 (33-X4)

*NSYM,init* is given by TBD

*NDBPS,u* is given in Table 33-X3 (Frequently used parameters)

*NDBPS,last,u* is given by TBD

*NDBPS,last,init,u* is given by TBD

For an EHT PPDU carrying a single user, the value of the PSDU\_LENGTH parameter returned in the RXVECTOR is calculated using Equation (33-X5).

 (33-X5)

where

*NSYM,RX* is given by Equation (33-X6)

*NDBPS,last,RX*  is given by TBD

*NDBPS* is defined in Table 33-X3 (Frequently used parameters)

*Nservice* and *Ntail* are defined in Table 33-X4 (Timing-related constants)

 (33-X6)

*Editor’s Note: Field names/locations in Equation (33-X6) needs to be updated once the preamble design is finalized.*

where

*NSYM* is given by TBD

 (33-X7)

where

*aRX* is given by Equation (33-X8)

*NSD,short* is defined in Table 33-X5 (NSD,short values)

*NSS*, *NBPSCS*, *R* are defined in Table 33-X3 (Frequently used parameters)

 (33-X8)

*Editor’s Note: Field names/locations in Equation (33-X8) needs to be updated once the preamble design is finalized.*

where

*a* is the pre-FEC padding factor (ranging from 1 to 4) indicated in U-SIG or EHT-SIG.

For an EHT PPDU carrying multiple users, the value of the RXVECTOR parameter PSDU\_LENGTH returned for user *u* is calculated using Equation (33-X9).

 (33-X9)

where

*NSYM,RX,u* is given by Equation (33-X10)

*NDBPS,last,RX,u* is given by Equation (33-X11)

*NDBPS,u* is defined in Table 33-X3 (Frequently used parameters)

*Nservice* and *Ntail* are defined in Table 33-X4 (Timing-related constants)

 (33-X10)

*Editor’s Note: Field names/locations in Equation (33-X10) needs to be updated once the preamble design is finalized.*

where

*NSYM* is given by TBD

 (33-X11)

*Editor’s Note: Field names/locations in Equation (33-X11) needs to be updated once the preamble design is finalized.*

where

*aRX,u* is given by Equation (33-X12)

*NSD,short,u* is *NSD,short* defined in Table 33-X5 (NSD,short values) for user *u*

*NSS,u*, *NBPSCS,u*, *Ru* are defined in Table 33-X3 (Frequently used parameters)

 (33-X12)

*Editor’s Note: Field names/locations in Equation (33-X12) needs to be updated once the preamble design is finalized.*

where

*a* is the pre-FEC padding factor (ranging from 1 to 4) indicated in U-SIG or EHT-SIG

33.X1.4 EHT PHY

The static EHT PHY characteristics is provided through the PLME-CHARACTERISTICS service primitive. If listed in Table 33-X2 (EHT PHY characteristics), then the static EHT PHY characteristics shall be as shown in Table 33-X2 (EHT-PHY characteristics). Otherwise, if listed in Table 27-55 (HE PHY characteristics), then the static EHT PHY characteristics shall be as shown in Table 27-55 (HE PHY characteristics). Otherwise, the static EHT PHY characteristics shall be as shown in Table 19-25 (HT PHY characteristics). The definitions for these characteristics are given in 6.5 (PLME SAP interface).

|  |  |
| --- | --- |
| Table 33-X2 - EHT PHY characteristics | |
| Characteristic | Value |
| aPSDUMaxLength | [TBD] |
| aRxPHYStartDelay | [TBD] |

[End of File]