IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| PDT-PHY-UHR-PPDU-Format | | | | |
| Date: 2024-12-09 | | | | |
| Author(s): | | | | |
| Name | Company | Address | Phone | email |
| Dongguk Lim | LG Electronics |  |  | Dongguk.lim@lge.com |
| Genadiy Tsodik | Huawei |  |  | genadiy.tsodik@huawei.com |
| Xuwen Zhao | TCL |  |  | zhaoxuwen123@outlook.com |
| Alice Chen | Qualcomm |  |  | alicel@qti.qualcomm.com |
| Shengquan Hu | Mediatek |  |  | Shengquan.hu@mediatek.com |
| Jianhan Liu | Mediatek |  |  | Jianhan.Liu@mediatek.com |
| Rui Yang | Interdigital |  |  | Rui.Yang@InterDigital.com |
| Bo Sun | Sanechips |  |  | sun.bo1@SANECHIPS.COM.CN |
| Youhan Kim | Qualcomm |  |  | youhank@qti.qualcomm.com |
| Qinghua Li | Intel |  |  | qinghua.li@INTEL.COM |
| Ross Jian Yu | Huawei |  |  | ross.yujian@huawei.com |
| Leonardo Lanante | Ofinno |  |  | llanante@OFINNO.COM |

Abstract

This document contains proposed draft text for 38.3.6 UHR PPDU formats.

* Initial draft

R0: initial version

R1: add the email of a TTT member

### UHR PPDU Format

Three UHR PPDU formats are defined: UHR MU PPDU, UHR TB PPDU and UHR ELR PPDU.

The format of the UHR MU PPDU is defined in [Figure 38-x1 (UHR MU PPDU format)](#_bookmark48). This format is used for transmission to one or more users. The PPDU is not a response to a triggering frame. In the UHR MU PPDU, the UHR-SIG field is present.

|  |
| --- |
| Figure 38-x1 UHR MU PPDU Format |

The format of the UHR TB PPDU is defined in [Figure 38-x2 (UHR TB PPDU format)](#_bookmark49). This format is used for a transmission that is a response to a triggering frame from an AP. In the UHR TB PPDU, the UHR-SIG field is not present and the duration of the UHR-STF field is twice the duration of the UHR-STF field in the UHR MU PPDU.



Figure 38-x2 UHR TB PPDU Format

The format of the UHR ELR PPDU is defined in Figure 38-x3 (UHR ELR PPDU format). This format is used for SU transmission.



Figure 38-x3 UHR ELR PPDU Format

The fields of the UHR PPDU formats are summarized in Table 38-yy (UHR PPDU fields).

|  |  |
| --- | --- |
| Table 38-yy UHR PPDU fields | |
| Field | Description |
| L-STF | Non-HT Short Training field |
| L-LTF | Non-HT Long Training field |
| L-SIG | Non-HT SIGNAL field |
| RL-SIG | Repeated Non-HT SIGNAL field |
| U-SIG | Universal SIGNAL field |
| ELR-MARK | ELR-MARK field |
| UHR-SIG | UHR SIGNAL field |
| UHR-STF | UHR Short Training field |
| UHR-LTF | UHR Long Training field |
| ELR-SIG | ELR SIGNAL field |
| Data | The Data field carrying the PSDU(s) |
| PE | Packet extension field |

The L-STF, L-LTF, L-SIG, RL-SIG, U-SIG, UHR-STF, UHR-LTF, and PE fields are present in the three UHR PPDU formats. The UHR-SIG field is present only in the UHR MU PPDU. The ELR-MARK and ELR-SIG fields are present only in the UHR ELR PPDU format. The PE field is defined in 38.3.16 (Packet extension).

The L-STF, L-LTF, L-SIG, RL-SIG, U-SIG, ELR-MARK, and UHR-SIG fields are referred to as pre-UHR modulated fields, while the UHR-STF, UHR-LTF, ELR-SIG, Data, and PE fields are referred to as the UHR modulated fields.

In the UHR TB PPDU, the pre-UHR modulated fields, which include L-STF, L-LTF, L-SIG, RL-SIG, and U-SIG fields, are sent only on the 20 MHz channels where the STA’s UHR modulated fields are present. If the STA’s UHR modulated fields occupy more than one 20 MHz channel, the pre-UHR modulated fields are duplicated over all 20 MHz channels UHR modulated fields are occupied.

A signal extension as described in 10.3.8 (Signal extension) shall be present in a transmitted PPDU if the TXVECTOR parameter NO\_SIG\_EXTN is false and one of the following conditions applies:

— The TXVECTOR parameter FORMAT is UHR, EHT, HE, HT\_MF, or HT\_GF.

— The TXVECTOR parameter FORMAT is NON\_HT and the TXVECTOR parameter NON\_HT\_MODULATION is ERP-OFDM or NON\_HT\_DUP\_OFDM.

A signal extension shall be assumed to be present (for the purpose of timing of PHY-RXEND.indication and PHY-CCA.indication primitives, as described below and in 38.3.25 (UHR receive procedure)) in a received PPDU if one of the following conditions applies:

— The RXVECTOR parameter FORMAT is UHR, EHT, HE, HT\_MF, or HT\_GF.

— The RXVECTOR parameter FORMAT is NON\_HT and the RXVECTOR parameter NON\_HT\_MODULATION is ERP-OFDM or NON\_HT\_DUP\_OFDM.

A PPDU containing a signal extension is called a signal extended PPDU. When transmitting a signal extended PPDU, the PHY-TXEND.indication primitive shall be emitted a period of aSignalExtension after the end of the actual ending time of the PPDU. When receiving a signal extended PPDU, the PHY-RXEND.indication primitive shall be emitted a period of aSignalExtension after the end of the actual ending time of the PPDU.