IEEE P802.11  
Wireless LANs

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| PDT Transmit Constellation Error Definition of UHR RRU TB PPDU | | | | |
| Date: 2025-05-09 | | | | |
| Author(s): | | | | |
| Name | Affiliation | Address | Phone | email |
| Ying Liu | NXP Semiconductors |  |  | ying.liu\_1@nxp.com |
|  |  |  |  |  |
|  |  |  |  |  |

Abstract

This document contains Proposed Draft Text (PDT) for transmit constellation error definition for UHR TB PPDU using RRU of the proposed TGbn (UHR, Ultra High Reliability) amendment to the 802.11 standard.

# Revision information

The following is a summary of the important changes that occurred within each revision of this document:

|  |  |
| --- | --- |
| **Revision** | **Major changes** |
| 0 | Initial revision |

**38 Ultra High Reliablity (UHR) PHY specification**

**38.3 UHR PHY**

**38.3.23 Transmit Specification**

[placeholder for detailed text]

**38.3.23.1 Transmitter spectral mask**

[placeholder for detailed text]

**38.3.23.2 Spectral Flatness**

[placeholder for detailed text]

**38.3.23.3 Transmit center frequency and symbol clock frequency tolerance**

[placeholder for detailed text]

**38.3.23.4 Modulation accuracy**

**38.3.23.4.3 Transmitter constellation error**

The number of spatial streams under test shall be equal to the number of utilized transmitting STA physical antenna (output) ports and also equal to the number of utilized testing instrumentation input ports. In the test, no beamforming steering matrix shall be used. In the test, only EQM scheme shall be used. In the test, no LDPC coding length of 3888 shall be used.

**Table 38-XX—Allowed relative constellation error versus constellation size and coding rate**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Modulation | Coding rate | Relative constellation error in an UHR MU PPDU (dB) | Relative constellation error in an UHR TB PPDU using RRU when transmit power is larger than the maximum power of EHT-MCS 7 (dB) | Relative constellation error in an UHR TB PPDU using RRU when transmit power is less than or equal to the maximum power of EHTMCS 7 (dB) |
| BPSK | 1/2 | -5 | -13 | -27 |
| QPSK | 1/2 | -10 | -13 | -27 |
| QPSK | 2/3 | -12 | -13 | -27 |
| QPSK | 3/4 | -13 | -13 | -27 |
| 16-QAM | 1/2 | -16 | -16 | -27 |
| 16-QAM | 2/3 | -18 | -18 | -27 |
| 16-QAM | 3/4 | -19 | -19 | -27 |
| 16-QAM | 5/6 | -20 | -20 | -27 |
| 64-QAM | 2/3 | -22 | -22 | -27 |
| 64-QAM | 3/4 | -25 | -25 | -27 |
| 64-QAM | 5/6 | -27 | -27 | -27 |
| 256-QAM | 2/3 | -29 | -29 | -29 |
| 256-QAM | 3/4 | -30 | -30 | -30 |
| 256-QAM | 5/6 | -32 | -32 | -32 |
| 1024-QAM | 3/4 | -35 | -35 | -35 |
| 1024-QAM | 5/6 | -35 | -35 | -35 |
| 4096-QAM | 3/4 | -38 | -38 | -38 |
| 4096-QAM | 5/6 | -38 | -38 | -38 |
| BPSK-DCM(EHT-MCS 15) | 1/2 | -5 | -13 | -27 |
| BPSK-DCM(EHT-MCS 14) | 1/2 | -5 | N/A | N/A |
| NOTE 1—The maximum power of UHRMCS 7 can be measured by setting the UL Target Receive Power subfield as defined in Table 9-29j (UL Target Receive Power subfield in Trigger frame) in the Trigger frame to 127 for the RU for which the EVM test is conducted.NOTE 2—N/A = not supported by the PPDU format | | | | |

**Text to be adopted ends here.**