IEEE P802.11
Wireless LANs

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| Annex B - PICS |
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Abstract

This submission proposes resolutions to CIDs 1388, 1423, 1047, 1673, 1247, 1432, 1561, 1630, 2228, 1833, 1881, 1988, 1824, 1679, 1922, 2220, 1086, 1736, 1558, 1176, 1638.

Changes are in relation to 11md D1.0 and 11ay D1.1.

**B.4 PICS proforma**

**B.4.3 IUT configuration**

*Change the table as follows (note that the entire table is not shown)*

| **Item** | **IUT configuration** | **References** | **Status** | **Support** |
| --- | --- | --- | --- | --- |
| … |  |  |  |  |
| \* CFPBSS | Operation in a PBSS | 4.3.3 | CFIndepSTAANDCFDMG:MCFDMG:O.7CFEDMG:M |  |
| .. |  |  |  |  |
| \*CFInfraSTA | Infrastructure mode | 4.3.4 | CFAP ORCFSTAofAP:MCFDMG:O.7CFEDMG:M | Yes  No  |
| … |  |  |  |  |
| \*CFDMG | Directional multi-gigabit (DMG) PHY | 9.4.2.127 (DMG Capabilities elemnent) | O.2CFDMG:MCFEDMG:MCFTDD:M | Yes  No  |
| … |  |  |  |  |
| \*CFEDMG | Enhanced directional multi-gigabit (EDMG) PHY | 9.4.2.250 (EDMG Capabilities element) | CFEDMG: M | Yes  No  |
| \*CFTDD | Time division duplex (TDD) features | 9.4.2.127 (DMG Capabilities elemnent) | CFDMG:OCFEDMG:O | Yes  No  |

**B.4.4 MAC protocol**

**B.4.4.2 MAC frames**

*Change the table as follows (note that the entire table is not shown)*

| **Item** | **MAC frame** | **References** | **Status** | **Support** |
| --- | --- | --- | --- | --- |
| … |  |  |  |  |
| FT51 | Sector Ack | Clause 9 | EDMG-M17.4:M | Yes  No  |
| FT52 | Block Ack Schedule | Clause 9 | EDMG-M9.2:M | Yes  No  |
| FT53 | TDD Beamforming | Clause 9 | CFTDD:M | Yes  No  |
| .. |  |  |  |  |
| FR52 | Sector Ack | Clause 9 | EDMG-M17.4:M | Yes  No  |
| FR53 | Block Ack Schedule | Clause 9 | EDMG-M9.2:M | Yes  No  |
| FR54 | TDD Beamforming | Clause 9 | CFTDD:M | Yes  No  |
| … |  |  |  |  |

**B.4.12 QoS base functionality**

*Change the table as follows (note that the entire table is not shown)*

| **Item** | **Protocol capability** | **References** | **Status** | **Support** |
| --- | --- | --- | --- | --- |
| … |  |  |  |  |
| QB4.3.3 | EDMG Compressed Block Ack | 9.3.1.9.7 | CFEDMG:M | Yes  No  N/A  |
| QB4.4 | Multi-TID Block Ack | ~~9.3.1.8.3~~ | ~~CFQoS:O~~~~CFHT OR CFTVHT:M~~ | ~~Yes  No  N/A ~~ |
| QB4.4.1 | Multi-TID Block Ack | 9.3.1.8.3 | CFQoS:OCFHT OR CFTVHT:M | Yes  No  N/A  |
| QB4.4.2 | EDMG Multi-TID Block Ack | 9.3.1.9.8 | CFEDMG:O | Yes  No  N/A  |
| … |  |  |  |  |

*Insert the following subclauses*

**B.4.31 Enhanced directional multi-gigabit (EDMG) features**

**B.4.31.1 EDMG MAC features**

| **Item** | **Protocol capabilities** | **References** | **Status** | **Support** |
| --- | --- | --- | --- | --- |
|  | Are the following MAC protocol features supported? |  |  |  |
| EDMG-M1 | EDMG capabilities signaling |  |  |  |
| EDMG-M1.1 | EDMG Capabilities element | 9.4.2.250 | CFEDMG:M | Yes  No  N/A  |
| EDMG-M1.2 | Signaling of STA capabilities in Probe Request, (Re)Association Request frames | 9.3.3.6, 9.3.3.8, 9.3.3.10, 9.4.2.250 | (CFEDMG AND(CFSTAofAPOR CFIBSSORCFPBSSnotPCP)):M | Yes  No  N/A  |
| EDMG-M1.3 | Signaling of STA capabilities in Probe Response, (Re)Association Response frames | 9.3.3.7, 9.3.3.9, 9.3.3.11, 9.4.2.250 | (CFEDMG AND(CFAP ORCFPCP)):M | Yes  No  N/A  |
| EDMG-M.2 | Signaling of EDMG Capabilities, EDMG Operation | 9.4.2.250, 9.4.2.251 | (CFEDMG AND(CFAP ORCFPCP)):M | Yes  No  N/A  |
| EDMG-M3 | MPDU aggregation |  |  |  |
| EDMG-M3.1 | Maximum A-MPDU Length Exponent | 9.4.2.250.1 | CFEDMG: M | Yes  No  N/A  |
| EDMG-M3.2 | Negotiation of window sizes: 64; 128; 256; 512; 1024 | 9.4.2.250.1 | CFEDMG: M | Yes  No  N/A  |
| EDMG-M3.3 | A-MPDU with multiple TIDs | 9.3.1.7.4, 9.3.1.9.8, 10.25.6, 10.63 | CFEDMG: O | Yes  No  N/A  |
| EDMG-M4 | EDMG flow control |  |  |  |
| EDMG-M4.1 | Flow control operation | 10.25 | CFEMDG:M | Yes  No  N/A  |
| EDMG-M4.2 | EDMG Flow Control Extension Configuration element |  |  |  |
| EDMG-M4.2.1 | RBUFCAP values: 0, FF | 9.4.2.263 | CFEDMG: M | Yes  No  N/A  |
| EDMG-M4.2.2 | RBUFCAP values: 1 – FE | 9.4.2.263 | CFEDMG: O | Yes  No  N/A  |
| EDMG-M4.2.3 | EDMG Flow Control Capabilities subelement | 9.4.2.263 | CFEMDG:O | Yes  No  N/A  |
| EDMG-M4.2.4 | Recipient Memory Configuration subelement | 9.4.2.263 | CFEMDG:O | Yes  No  N/A  |
| EDMG-M4.2.5 | Advanced Recipient Memory Length Exponent | 9.4.2.263 | CFEMDG:O | Yes  No  N/A  |
| EDMG-M5 | Unsolicited block ack  | 9.4.2.265, 10.25.12 | CFEDMG: O | Yes  No  N/A  |
| EDMG-M6 | EDMG segmentation and reassembly | 9.4.2.250.7, 10.62 | CFEDMG: O | Yes  No  N/A  |
| EDMG-M7 | EDMG AP or PCP distributed scheduling | 10.61 | CFEDMG:O | Yes  No  N/A  |
| EDMG-M8 | Use of multiple channels  |   |   |  |
| EDMG-M8.1 | CCA on the primary, secondary channels | 8.3.5.12  | CFEDMG: M | Yes  No  N/A  |
| EDMG-M8.2 | CCA on secondary1 channels | 8.3.5.12, 9.4.2.250.5  | EDMG-P2.3 OR EDMG-P2.6:M | Yes  No  N/A  |
| EDMG-M8.3 | CCA on secondary2 channels | 8.3.5.12, 9.4.2.250.5 | EDMG-P2.4 OR EDMG-P2.6:M | Yes  No  N/A  |
| EDMG-M8.3 | RTS, DMG CTS, DMG DTS, Ack, Block Ack duplicate transmission  | 10.3.2 | CFEDMG: M | Yes  No  N/A  |
| EDMG-M8.4 | RTS, DMG CTS, DMG DTS bandwidth signaling | 10.3.2, 10.37.11.2 | CFEDMG: M | Yes  No  N/A  |
| EDMG-M9 | MIMO |  |  |  |
| \*EDMG-M9.1 | SU-MIMO capable | 9.4.2.250.2 | CFEDMG: O | Yes  No  N/A  |
| \*EDMG-M9.2 | MU-MIMO capable | 9.4.2.250.2 | CFEDMG: O | Yes  No  N/A  |
| EDMG-M9.3 | SU-MIMO channel access | 10.37.11.4.2, 10.37.11.4.3 | EDMG-M9.1:M | Yes  No  N/A  |
| EDMG-M9.4 | MU-MIMO channel access | 10.37.11.4.2, 10.37.11.4.4  | EDMG-M9.2:M | Yes  No  N/A  |
| EDMG-M10 | EDMG A-PPDU format | 10.14, 30.3.2.2 | CFEDMG: O | Yes  No  N/A  |
| EDMG-M11 | EDMG fast authentication and association | 4.5.4.2, 12.13 | CFEDMG: O | Yes  No  N/A  |
| EDMG-M12 | Unsolicited RSS | 10.39.6.2 | CFEDMG: O | Yes  No  N/A  |
| EDMG-M13 | EDMG Extended Schedule element | 9.4.2.252  | (CFEDMG AND(CFSTAofAPOR CFIBSSORCFPBSSnotPCP)):M | Yes  No  N/A  |
| EDMG-M14 | Directional allocation | 10.37.11.3 | CFEDMG: OEDMG-M17.4:M | Yes  No  N/A  |
| EDMG-M15 | EDMG power save enhancements |  |  |  |
| EDMG-M15.1 | QoS Triggered unscheduled (QoS-TU) power save  | 9.4.2.264, 11.2.7.2  | (CFEDMG AND(CFAP ORCFPCP)):M | Yes  No  N/A  |
| EDMG-M15.2 | Spatial multiplexing power save | 11.2.7.2  | EDMG-M9.1: M | Yes  No  N/A  |
| EDMG-M15.3 | MU-MIMO power save  | 11.2.7.5 | EDMG-M9.2: M | Yes  No  N/A  |
| EDMG-M16 | Reverse direction protocol |  |  |  |
| EDMG-M16.1 | Reverse direction for SU-SISO | 10.29 | CFEDMG: M | Yes  No  N/A  |
| EDMG-M16.2 | Reverse direction for SU-MIMO | 10.29 | EDMG-M9.1: M | Yes  No  N/A  |
| EDMG-M16.3 | Reverse direction for MU-MIMO | 10.29.5 | EDMG-M9.2: M | Yes  No  N/A  |
| EDMG-M17 | EDMG beamforming |  |  |  |
| EDMG-M17.1 | SU-MIMO beamforming | 10.39.9.2.2 | EDMG-M9.1: M | Yes  No  N/A  |
| EDMG-M17.2 | MU-MIMO beamforming | 10.39.9.2.3 | EDMG-M9.2: M | Yes  No  N/A  |
| EDMG-M17.3 | Hybrid beamforming | 10.39.9.2.4 | CFEDMG:O | Yes  No  N/A  |
| \*EDMG-M17.4 | Beamforming for asymmetric links | 10.39.9.3 | CFEDMG:O | Yes  No  N/A  |
| EDMG-M17.5 | Group beamforming | 10.39.9.4 | CFEDMG:O | Yes  No  N/A  |
| EDMG-M17.6 | BRP transmit sector sweep | 10.39.9.5 | CFEDMG:M | Yes  No  N/A  |
| EDMG-M17.7 | First path beamforming | 10.39.9.6 | CFEDMG:O | Yes  No  N/A  |
| EDMG-M17.8 | Partial sector level sweep | 10.39.6.4, 11.27.1 | CFEDMG:O | Yes  No  N/A  |
| EDMG-M18 | EDMG phase hopping | 10.60 | CFEDMG:O | Yes  No  N/A  |

**B.4.31.2 EDMG PHY features**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item** | **Protocol capabilities** | **References** | **Status** | **Support** |
|  | Are the following PHY protocol features supported? |  |  |  |
| EDMG-P1 | PHY operating modes |  |  |  |
| EDMG-P1.1 | Operation according to Clause 30 | 30 | CFEDMG:M | Yes  No  N/A  |
| EDMG-P2 | Channel bandwidth |  |  |  |
| EDMG-P2.1 | 2.16 GHz | 30.3.4 | CFEDMG:M | Yes  No  N/A  |
| EDMG-P2.2 | 4.32 GHz | 30.3.4 | CFEDMG:M | Yes  No  N/A  |
| \*EDMG-P2.3 | 6.48 GHz | 30.3.4 | CFEDMG:O | Yes  No  N/A  |
| \*EDMG-P2.4 | 8.64 GHz | 30.3.4 | CFEDMG:O | Yes  No  N/A  |
| EDMG-P2.5 | 2.16 + 2.16 GHz | 30.3.4 | CFEDMG:O | Yes  No  N/A  |
| \*EDMG-P2.6 | 4.32 + 4.32 GHz | 30.3.4 | CFEDMG:O | Yes  No  N/A  |
| EDMG-P3 | Channelization |  |  |  |
| EDMG-P3.1 | Channels 2 and 10 | 30.3.4 | CFEDMG:M | Yes  No  N/A  |
| EDMG-P3.2 | Other channels | 30.3.4 | CFEDMG:O | Yes  No  N/A  |
| EDMG-P4 | PHY capabilities |  |  |  |
| EDMG-P4.1 | SU-SISO |  | CFEDMG:M | Yes  No  N/A  |
| EDMG-P4.2 | SU-MIMO |  | EDMG-M9.1:M | Yes  No  N/A  |
| EDMG-P4.3 | MU-MIMO |  | EDMG-M9.2:M | Yes  No  N/A  |
| EDMG-P4.4 | Support of one spatial streams (transmit and receive) in all supported channel bandwidth configurations |  | CFEDMG:M | Yes  No  N/A  |
| EDMG-P4.5 | Support of 2 through 8 spatial streams (transmit and receive) in all supported channel bandwidth configurations |  | CFEDMG:O | Yes  No  N/A  |
| EDMG-P5 | PHY frame format |  |  |  |
| EDMG-P5.1 | EDMG preamble | 30.3.3 |  |  |
| EDMG-P5.1.1 | Non-EDMG portion of EDMG preamble | 30.3.3.2 |  |  |
| EDMG-P5.1.1.1 | L-STF | 30.3.3.2.2 | CFEDMG:M | Yes  No  N/A  |
| EDMG-P5.1.1.2 | L-CEF | 30.3.3.2.3 | CFEDMG:M | Yes  No  N/A  |
| EDMG-P5.1.1.3 | L-Header | 30.3.3.2.4 | CFEDMG:M | Yes  No  N/A  |
| EDMG-P5.1.2 | EDMG portion of EDMG preamble | 30.3.3.3 |  |  |
| EDMG-P5.1.2.1 | EDMG-Header-A | 30.3.3.3.2 | CFEDMG:M | Yes  No  N/A  |
| EDMG-P5.1.2.2 | EDMG-STF | 30.3.3.3.3 | EDMG-P2.2 OR EDMG-P2.3 OR EDMG-P2.4 OR EDMG-P2.6:M | Yes  No  N/A  |
| EDMG-P5.1.2.3 | EDMG-CEF | 30.3.3.3.4 | EDMG-P2.2 OR EDMG-P2.3 OR EDMG-P2.4 OR EDMG-P2.6:M | Yes  No  N/A  |
| EDMG-P5.1.2.4 | EDMG-Header-B | 30.3.3.3.5 | EDMG-P4.3:M | Yes  No  N/A  |
| EDMG-P5.2 | EDMG control mode PPDU |  |  |  |
| EDMG-P5.2.1 | MCS 0 | 30.4 | CFEDMG:M | Yes  No  N/A  |
| EDMG-P5.2.2 | Non-EDMG duplicate MCS 0 | 30.4.6.2 | EDMG-P2.2 OR EDMG-P2.3 OR EDMG-P2.4 OR EDMG-P2.5 OR EDMG-P2.6:M | Yes  No  N/A  |
| EDMG-P5.2.3 | Control mode | 30.3.3.2.4 |  |  |
| EDMG-P5.2.3.1 | Control trailer | 30.3.7, 10.37.11.5 | CFEDMG:O(EDMG-M9.1 OR EDMG-M9.2):M | Yes  No  N/A  |
| EDMG-P5.2.3.2 | EDMG-Header-A, MCS 0 | 30.3.3.3 | CFEDMG:M | Yes  No  N/A  |
| EDMG-P5.2.3.3 | Channel bandwidth signaling in L-Header | 30.3.3.2.4 | CFEDMG:M | Yes  No  N/A  |
| EDMG-P5.3 | EDMG SC mode PPDU | 30.5 |  |  |
| EDMG-P5.3.1 | MCSs | 30.5.8 |  |  |
| EDMG-P5.3.1.1 | MCS 1-5, 7-10 |  | CFEDMG:M | Yes  No  N/A  |
| EDMG-P5.3.1.1 | MCS 6, 11-21 |  | CFEDMG:O | Yes  No  N/A  |
| EDMG-P5.3.1.2 | 𝜋/2-8-PSK MCS 12, 13 |  | CFEDMG:O | Yes  No  N/A  |
| EDMG-P5.3.1.3 | NUC 𝜋/2-64-QAM MCS 17-21 |  | CFEDMG:O | Yes  No  N/A  |
| EDMG-P5.3.2 | Non-EDMG duplicate MCS | 30.5.10.3 |  |  |
| EDMG-P5.3.2.1 | MCS 1-4 |  | CFEDMG:M | Yes  No  N/A  |
| EDMG-P5.3.2.2 | Other MCSs |  | CFEDMG:O | Yes  No  N/A  |
| EDMG-P5.3.3 | Guard interval | 30.5.9 |  |  |
| EDMG-P5.3.3.1 | Short |  | CFEDMG:O | Yes  No  N/A  |
| EDMG-P5.3.3.2 | Normal |  | CFEDMG:M | Yes  No  N/A  |
| EDMG-P5.3.3.3 | Long |  | CFEDMG:O | Yes  No  N/A  |
| EDMG-P5.3.4 | STBC | 30.5.9.5.3 | CFEDMG:O | Yes  No  N/A  |
| EDMG-P5.4 | EDMG OFDM mode PPDU | 30.6 | EDMG-P1.1:O | Yes  No  N/A  |
| EDMG-P5.4.1 | MCSs |  |  |  |
| EDMG-P5.4.1.1 | MCS 1-20 |  | EDMG-P5.4:O | Yes  No  N/A  |
| EDMG-P5.4.2 | Guard Interval | 30.6.1.2 |  |  |
| EDMG-P5.4.2.1 | Short |  | EDMG-P5.4:O | Yes  No  N/A  |
| EDMG-P5.4.2.2 | Normal |  | EDMG-P5.4:M | Yes  No  N/A  |
| EDMG-P5.4.2.3 | Long |  | EDMG-P5.4:O | Yes  No  N/A  |
| EDMG-P5.4.3 | Tone pairing | 30.6.8.3.8 |  |  |
| EDMG-P5.4.3.1 | Static tone pairing |  | EDMG-P5.4:M | Yes  No  N/A  |
| EDMG-P5.4.3.2 | Dynamic tone pairing |  | EDMG-P5.4:O | Yes  No  N/A  |
| EDMG-P5.4.4 | STBC | 30.6.8.3.10 | EDMG-P5.4:O | Yes  No  N/A  |
| EDMG-P5.4.5 | Phase hopping | 30.6.8.3.11 |  |  |
| EDMG-P5.4.5.1 | Open Loop Spatial Multiplexing |  | EDMG-P5.4:O | Yes  No  N/A  |
| EDMG-P5.4.5.2 | Phase hopping |  | EDMG-P5.4:O | Yes  No  N/A  |
| EDMG-P 5.5 | EDMG A-PPDU | 30.3.2.2 | EDMG-P5.3:OEDMG-P5.4:O | Yes  No  N/A  |
| EDMG-P6 | EDMG beamforming | 30.9 |  |  |
| EDMG-P6.1 | Short SSW | 30.9.1 | CFEDMG:M | Yes  No  N/A  |
| EDMG-P6.2 | Beam refinement | 30.9.2 |  |  |
| EDMG-P6.2.1 | EDMG BRP packet (TRN fields) | 30.9.2.2 |  |  |
| EDMG-P6.2.1.1 | TRN P / TRN M / TRN N | 30.9.2.2.3 |  |  |
| EDMG-P6.2.1.1.1 | P=2, M=5, N=2 |  | CFEDMG:M | Yes  No  N/A  |
| EDMG-P6.2.1.1.2 | P=2, M=7, N=0 |  | CFEDMG:M | Yes  No  N/A  |
| EDMG-P6.2.1.1.3 | P=0, M=2/5/8/11, N=2 |  | CFEDMG:M | Yes  No  N/A  |
| EDMG-P6.2.1.1.4 | P=0, M=0-15, N=0 |  | CFEDMG:M | Yes  No  N/A  |
| EDMG-P6.2.1.1.5 | All other valid combinations of P, M, N |  | CFEDMG:O | Yes  No  N/A  |
| EDMG-P6.2.1.2 | TRN Subfield Sequence | 30.3.3.2.4 |  |  |
| EDMG-P6.2.1.2.1 | 0 = 128×NCB |  |  |  |
| EDMG-P6.2.1.2.1.1 | NCB = 1 or 2 |  | CFEDMG:M | Yes  No  N/A  |
| EDMG-P6.2.1.2.1.2 | NCB = 3 or 4 |  | CFEDMG:O | Yes  No  N/A  |
| EDMG-P6.2.1.2.2 | 1 = 256×NCB |  | CFEDMG:O | Yes  No  N/A  |
| EDMG-P6.2.1.2.3 | 2 = 64×NCB |  | CFEDMG:O | Yes  No  N/A  |
| EDMG-P6.2.2 | Channel measurement | 30.9.2.2.7 | CFEDMG:O | Yes  No  N/A  |
| EDMG-P6.2.3 | DMG TRN support over 2.16 GHz channel |  |  |  |
| EDMG-P6.2.3.1 | Transmision | 20.10.2.2.2 | CFEDMG:M | Yes  No  N/A  |
| EDMG-P6.2.3.2 | Reception | 20.10.2.2.2 | CFEDMG:O | Yes  No  N/A  |
| EDMG-P7 | LDPC |  |  |  |
| EDMG-P7.1 | Codeword = 672, R = 1/2, 5/8, 3/4, 13/16 | 20.3.8 | EDMG-P5.3 OR EDMG-P5.4:M | Yes  No  N/A  |
| EDMG-P7.2 | Codeword = 624, R = 7/8 punctured | 30.5.9.4.3, 30.6.8.2.3 | EDMG-P5.3 OR EDMG-P5.4:OEDMG-P7.3:M | Yes  No  N/A  |
| EDMG-P7.3 | Codeword = 672, R = 7/8 superimposed | 30.3.6 | EDMG-P5.3 OR EDMG-P5.4:O | Yes  No  N/A  |
| EDMG-P7.4 | Codeword = 1344, R = 1/2, 5/8, 3/4, 13/16 | 30.3.6 | EDMG-P5.3 OR EDMG-P5.4:O | Yes  No  N/A  |
| EDMG-P7.5 | Codeword = 1248, R = 7/8 punctured | 30.5.9.4.3, 30.6.8.2.3 | EDMG-P5.3 OR EDMG-P5.4:OEDMG-P7.6:M | Yes  No  N/A  |
| EDMG-P7.6 | Codeword = 1344, R = 7/8 superimposed | 30.3.6 | EDMG-P5.3 OR EDMG-P5.4:O | Yes  No  N/A  |

**B.4.32 Time division duplex (TDD) features**

| **Item** | **Protocol capabilities** | **References** | **Status** | **Support** |
| --- | --- | --- | --- | --- |
|  | Are the following TDD protocol features supported? |  |  |  |
| TDD-M1 | TDD capabilities signaling |  |  |  |
| TDD-M1.1 | DMG Capabilities element | 9.4.2.127 | CFTDD:M | Yes  No  N/A  |
| TDD-M1.2 | Signaling of STA capabilities in Probe Request, (Re)Association Request frames | 9.3.3.6, 9.3.3.8, 9.3.3.10, 9.4.2.127 | (CFTDD AND(CFSTAofAPOR CFIBSSORCFPBSSnotPCP)):M | Yes  No  N/A  |
| TDD-M1.3 | Signaling of STA capabilities in Probe Response, (Re)Association Response frames | 9.3.3.7, 9.3.3.9, 9.3.3.11, 9.4.2.127 | (CFTDD AND(CFAP ORCFPCP)):M | Yes  No  N/A  |
| TDD-M.2 | TDD channel access | 10.37.6.2.2 | (CFTDD AND(CFAP ORCFPCP)):M | Yes  No  N/A  |
| TDD-M4 | MIMO |  |  |  |
| \*TDD-M4.1 | SU-MIMO capable | 9.4.2.250.2 | CFTDD: O | Yes  No  N/A  |
| TDD-M4.2 | SU-MIMO channel access | 10.37.11.4.2, 10.37.11.4.3 | TDD-M4.1:M | Yes  No  N/A  |
| TDD-M5 | TDD beamforming features |  |  |  |
| TDD-M5.1 | TDD beamforming | 10.39.10 | CFTDD:M | Yes  No  N/A  |
| TDD-M5.2 | SU-MIMO beamforming | 10.39.9.2.2.1 | CFTDD:O | Yes  No  N/A  |