IEEE P802.11  
Wireless LANs

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| LB239 PHY Measurement CIDs | | | | |
| Date: 2019-03-11 | | | | |
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Abstract

This document proposes resolutions to LB239 comments on PHY sensitivity and EVM measurement.

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| 4148 | 454.22 | 29.3.9.8 | "The number of spatial streams under test shall be equal to the number of antenna (output) ports of the transmitting EDMG STA and also equal to the number of input ports of the device under test. Each antenna (output) port of the transmitting EDMG STA shall be connected through a cable to one input port of the device under test. The minimum sensitivity levels specified in Table 85 through Table 89 apply only to non-31 STBC modes.": Nice try! (E)DMG antennas do not have ports. They can not be disconnected from the RF chip. The test described here will not work! | replace with the following text: "When a device has multiple DMG RX antennas, each antenna will be tested in SISO non-STBC mode, using a sptial expansion matrix that direct the single spatial stream to the tested antenna. All other antennas shall be covered with absorbtive material" |

Proposed Resolution:  **Accept**

***TGay Editor: Modify the text in P454L22 as follows:***

When a device has multiple DMG RX antennas, each antenna will be tested in SISO non-STBC mode, using a sptial expansion matrix that direct the single spatial stream to the tested antenna. All other antennas shall be covered with absorbtive material. If covering of antenna with absorbtive material is not possible, the DUT shall disable all antennas besides the one being tested.

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| 4150 | 534.05 | 29.5.11.1.1 | "Each transmit chain of the transmitting STA shall be connected through a cable to one input port of the testing instrumentation.": It is impossible to disconnect antennas from the RF chip, there is no antenna port. | Provide a different definition of the test |

Proposed resolution: **Revise**

***TGay Editor: Modify the following text in P525L1 (29.5.11.1.1) as follows:***

If the TXVECTOR parameter EDMG\_MODULATION is set to EDMG\_SC\_MODE, the TXVECTOR parameters NUM\_STS and NUM\_TX\_CHAINS shall be equal, and the value of both parameters shall be equal to the number of utilized testing instrumentation input antennas. In the test, *NSS* = *NSTS* (no STBC) shall be used. If the TXVECTOR parameter NUM\_STS is set to a value greater than 1, the two or more space-time streams shall have the same modulation type. The identity matrix should be used as the expansion matrix. Each antenna of the transmitting STA which is connected to a transmit chain shall be assigned to an antenna of the testing instrumentation in a way that makes leakage between the antennas negligible.

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| 4151 | 566.24 | 29.6.11.1.1 | "Each transmit chain of the transmitting STA shall be connected through a cable to one input port of the testing  instrumentation." EMDG devices do not have antenna ports and the antennas cannot be disconnected from the RF chip. | Povide over the air testing method, possibly one transmit chain at a time. |

Proposed Resolution: **Revise**

***TGay Editor: Modify the text in P566L22 (29.6.11.1.1) as follows:***

The transmit modulation accuracy test shall be performed by instrumentation capable of converting the transmitted signals into a stream of complex samples at sampling rate greater than or equal to the OFDM sampling rate *Fs*. The TXVECTOR parameters NUM\_STS and NUM\_TX\_CHAINS shall be equal, and the value of both parameters shall be equal to the number of utilized testing instrumentation input antennas. Each antenna of the transmitting STA which is connected to a transmit chain shall be assigned to an antenna of the testing instrumentation in a way that makes leakage between the antennas negligible.

. In the test, *NSS* = *NSTS* (i.e., no STBC) shall be used. If the TXVECTOR parameter NUM\_STS is set to a value greater than 1, the two or more space-time streams shall have the same modulation type.

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**References:**