IEEE P802.11
Wireless LANs

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| PHY CCA and Other CIDs |
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| Author(s): |
| Name | Affiliation | Address | Phone | email |
| Assaf Kasher | Qualcomm |  |  | akasher@qti.qualcomm.com |
| Alecsander Eitan | Qualcomm |  |  | eitana@qti.qualcomm.com |
| Solomon Trainin | Qualcomm |  |  | strainin@qti.qualcomm.com |
| Amichai Sanderovich | Qualcomm |  |  | amichais@qti.qualcomm.com |
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Abstract

This document suggests text for the PHY CCA (CID69) and the SSSW FCS CID (72) resolution

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| --- | --- | --- | --- | --- | --- |
| 69 | 163.01 | 1 | 30.5 | Missing definition of CCA and sensitivity | Add |

**Discussion**:

The level and scenario in which the PHY indicates PHY-CCA.busy need to be define. We propose to follow the following guidelines:

1. For a single channel, any valid EDMG transmission at a power level higher than the sensitivity of SC MCS 1 shall cause PHY-CCA.busy within aCCATime=1usec. The CCA shall be maintained for the length of the packet.
2. For any channel bonding channel, the start of any valid EDMG transmission at a level higher than the sensitivity of single carrier single channel MCS1 at the primary channel shall cause PHY-CCA.busy within aCCATime=1usec. This is a result of the fact the allocation not including the primary channel are unprotected SP that don’t rely on CCA.
3. When a device has more than one active RX chain, shall set PHY-CCA valid for any valid EDMG transmission at a level higher than the sensitivity of SC in any of the receiver chains.
4. There is no different sensitivity for any EDMG mode. The CCA shall appear in the common (30.3) subclause.

***TGay Editor: Add the following text as subclause 3.3.8 after subclause 3.3.7 Control Trailer:***

The start of a valid single channel EDMG PPDU at a receive power level greater than the minimum sensitivity for single channel SC MCS 1 shall cause the receiver to issue a PHY-CCA.indication(BUSY) with a probability > 90% within aCCAtime. The PHY-CCA.indication(BUSY) shall be maintained for the duration of the packet. The receiver shall issue the PHY-CCA.indication(BUSY) for any signal 20 dB above the minimum sensitivity for single channel SC MCS 1.

For a receiver open to any combination of channel bonding or channel aggregation, the start of a valid EDMG PPDU at a receive power level greater than the minimum sensitivity for single channel SC MCS 1 at the primary channel, shall cause the receiver to issue a PHY-CCA.indication(BUSY) with a probability > 90% within aCCAtime. The PHY-CCA.indication(BUSY) shall be maintained for the duration of the packet. The receiver shall issue the PHY-CCA.indication(BUSY,primary/secondary/secondary1/secondary2) for any signal 20 dB above the minimum sensitivity for single SC MCS 1 at any of the channels (primary/secondary/secondary1/secondary2) it is open to receive in.

A receiver that has more than one RX chain active, shall issue PHY-CCA.indication(BUSY,RX-Antenna-ID) if the condition above applies to any DMG antenna connected to an active receive chain.

***TGay Editor: Add the following row to table 114 EDMG PHY characteristic:***

|  |  |
| --- | --- |
| aCCATime | 1usec |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 72 | 153.10 | 10 | 30.9.1.1 | "The four MSBs of the FCS" This is a poor check sequence | Replace with a better 4 bit FCS (submission is needed) |  |

**Discussion:** the algorithm used is not optimal but the performance gain is other algorithms (such as the best 4 bit CRC) is not significant. We propose to modify the description of the FCS so that it is clear that it is the 32 bit MAC FCS.

***TGay Editor: Modify the last row of table 68***  ***-- Short SSW field definition:***

|  |  |
| --- | --- |
| FCS | The four MSBs of the FCS - The FCS is calculated as defined in 9.2.4.8 |