IEEE P802.11
Wireless LANs

|  |
| --- |
| 6 GHz RNR PSD clarification |
| Date: 2020-07-06 |
| Author(s): |
| Name | Company | Address | Phone | email |
| Thomas Derham | Broadcom |  |  | thomas.derham@broadcom.com |
|  |  |  |  |  |

Abstract

The resolution to CID 24558 in 20/822r6 includes definition of 20 MHz PSD subfield in Reduced Neighbor Report element. While the units are specified, the encoding is not explicitly specified (although there is a reference to the TPE where similar PSD limits are indicated with both units and encoding). To avoid ambiguity and potential interop issues, the encoding of the 20 MHz PSD subfield should be clarified, and made consistent with the encoding of PSD limits in the TPE. The value -128 is reserved in RNR since it refers to primary 20 of the reported AP, so operation will always be allowed on that channel.

This change should be adopted after the changed in 20/822r6 are adopted.

**Discussion:**

The resolution to CID 24558 in 20/822r6 includes definition of 20 MHz PSD subfield in Reduced Neighbor Report element. While the units are specified, the encoding is not explicitly specified (although there is a reference to the TPE where similar PSD limits are indicated with both units and encoding). To avoid ambiguity and potential interop issues, the encoding of the 20 MHz PSD subfield should be clarified, and made consistent with the encoding of PSD limits in the TPE. The value -128 is reserved in RNR since it refers to primary 20 of the reported AP, so operation will always be allowed on that channel.

This change should be adopted after the changed in 20/822r6 are adopted.

**Proposed change**:

Note: Referenced to the changes adopted in 20/822r6

* Reduced Neighbor Report element
* Neighbor AP Information field

*Modify as follows:*

The Co-Located AP subfield is set to 1 if every AP in this Neighbor AP Information field is in the same co-located AP set as the transmitting AP. It is set to 0 otherwise.

The 20 MHz PSD subfield, when present, indicates a maximum transmit power for the Default category, with unit interpretation of PSD EIRP in dBm/MHz (see 9.4.2.161 Transmit Power Envelope element and 11.7.5 Specification of Regulatory and Local Maximum Transmit Power Levels), corresponding to the primary 20 MHz channel of the reported AP. The maximum transmit PSD is encoded as a 2s complement signed integer. The value -128 is reserved. The value of +127 indicates that no maximum PSD limit is specified for the corresponding 20 MHz channel. For all other values Y of the subfield (i.e. -127 to +126, inclusive), the maximum transmit PSD in the 20 MHz channel is *Y*/2 dBm/MHz (i.e. ranging from -63.5 to +63 dBm/MHz).

NOTE – For example, suppose the reported AP transmits one Transmit Power Envelope element in Beacon and Probe Response frames, with Maximum Transmit Power For 20 MHz of 20 dBm (regulatory client EIRP). Then, the 20 MHz PSD subfield indicates the equivalent PSD limit of 7 dBm/MHz with the value 14.