**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) | |
| Title | **D4 Comments Resolution Based PHY VI Super Frame Structure, Dimming, and PPDU Format Specification** | |
| Date Submitted | September, 2017 | |
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| Re: | Draft D4 Comment Resolution based PHY VI Super Frame Structure, Dimming and PPDU Format Specification Revision | |
| Abstract | Details of Resolutions regarding to the submitted Comments on D4 are suggested for PHY VI Super Frame Structure, Dimming and PPDU Format Specification Revision. The PHY VI is designed to operate on the application services like LED ID, LiFi/CamCom, Digital Signage with Advertisement Information etc. | |
| Purpose | Draft D4 Comments Resolutions and Editorial Revision. | |
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# **1. PHY VI SUPERFRAME STRUCTURE**

# **4.8 Some access mechanism by PHY types**

# The UFSOOK, Twinkle VPPM, Offset-VPWM, MPM, VTASC, SS2DC, and IDE transmitter schemes use unslotted ALOHA; that is, when the transmitter has a packet to send, it just sends it. There is no beacon and the transmitter does not do a listen before talk channel activity check. The superframe structure Figure 19 consists of only the contention access period (see subclause 5.1.1.1.2).

# **2. PHY VI DIMMING**

The dimming is not supported on PHY VI modes.

# **3. PHY VI PPDU Format**

**8.6.1.4.1 IDE Preamble Field**

The SHR is used by the transceiver to obtain optical clock synchronization with an incoming message is called preamble. The standard defines one fast locking pattern (FLP) followed by choice of four topology dependent patterns (TDPs) for the purposes of distinguishing different PHY topologies is shown in Table 86.

**8.6.1.4.4 SS2DC Preamble Field**

This follows the IDE preamble field mode. See 8.6.1.4.1 for more details.

**8.6.1.4.5 VTASC Preamble Field**

This follows the IDE preamble field mode. See 8.6.1.4.1 for more details.

**8.6.2.4.1 IDE Header Field**

The Header Field is described as shown in Table 97 and shall be transmitted with data to identify the PHY Mode, Data rate, and PSDU length to identify the transmission specification.

**Table 97 – PHY Header**

|  |  |  |
| --- | --- | --- |
| **PHY Header Field** | **Bit-Width** | **Explanation on usage** |
| Burst Mode | 1 | Reduce Preamble and IFS |
| MCS ID | 6 | Provide information about PHY types and data rate |
| PSDU Length | 16 | Length up to aMaxPHYFrameSize |
| Reserved Fields | 6 | Future use |

Burst Mode Field: The burst mode bit indicates that the next frame following the current frame is part of the burst mode. The Burst Mode bit shall be set TRUE if the burst mode is being used otherwise, the Burst Mode bit shall be set FALSE.

MCS ID Field: The modulation and coding scheme (MCS) ID shall be indicated in the PHY header based on Table 83.

PSDU Field: The PSDU length field specifies the total number of octets contained in the PSDU.

**8.6.2.4.4 SS2DC Header Field**

This field follows same as the IDE header field mode. See 8.6.2.4.1 for more details.

**8.6.2.4.5 VTASC Header Field**

This field follows same as the IDE header field mode. See 8.6.2.4.1 for more details.

**8.6.5.4.1 IDE PSDU Field**

The PSDU field has a variable length and carries the arbitrary number of payload bits based on the block selection. The structure of the PSDU field is as shown in Figure 153.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Block 1 | Block 2 | … | Block N-1 | Block N |
| Data Bits | Symbol 1 | Symbol 2 | … | Symbol N-1 | Symbol N |

**Figure 153 – IDE PSDU Field Structure**

Where the block is MxN pixels and the bits per symbol is as per modulation mode description in clause 15 PHY VI Specifications.

**8.6.5.4.4 SS2DC PSDU Field**

The PSDU field follows the IDE PSDU field mode. See 8.6.5.4.1 for more details.

**8.6.5.4.5 VTASC PSDU Field**

The PSDU field follows the IDE PSDU field mode. Refer 8.6.5.4.1 for more details.