**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title | **SNUST - Offset-VPWM MAC Frame Format and MAC PIB Attributes Specification Revision** |
| Date Submitted | January, 2017 |
| Source | Jaesang Cha, Kim Chan (SNUST), Chunseop Kim (QUBER Co., Ltd), Kirhyong Kim (Seil Technologies Co., Ltd.), Junghoon Lee (Dongseoul Univ.), Seoungyoun Lee (Dongseoul Univ.), Sangyule Choi (Induk Unv.), Yongkyu Yoon (Univ. of Florida), Sooyoung Chang (CSUS), Vinayagam Mariappan (SNUST) | Voice: [ ]Fax: [ ]E-mail: [chajs@seoultech.ac.kr] |
| Re: | Draft D1 Comment Resolution based Offset-VPWM MAC Frame Format and MAC PIB Attributes Specification Revision |
| Abstract | Details of Resolutions regarding to the submitted Comments on D1 are suggested for Offset-VPWM MAC Frame Format and MAC PIB Attributes specification revision. The Flash Light designed to support LBS, Authentication, IoT/IoL, etc. |
| Purpose | D1 Comments Resolutions and Editorial Revision. |
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# **1. MAC FRAME FORMARTS FOR Offset-VPWM**

# **Offset-VPWM MAC Frame Format**

The MAC frame structure is formatted as illustrated in Figure 5-1 for Offset Variable Pulse Width Modulation for Smart Device Flash Light.

 

**Figure 5-1 – Offset VPWM MAC Frame Format**

**5.2.2.1 Frame Payload Field**

The Frame Payload field has a variable length and contains information specific to individual frame types. If the Security Enabled subfield is set to one in the frame control field, the frame payload is protected as defined by the security suite selected for that frame.

**5.2.2.2 FCS Field**

The FCS field is 2 octets in length and the FCS is calculated over the MHR and MSDU parts of the frame. The FCS shall be only generated for payloads greater than zero bytes.

The FCS is option is given as an optional option, it is adaptive to RS/CRC/NONE.

The FEC support for Offset VPWM Outer Codes are given in Table 5-1.

|  |  |  |
| --- | --- | --- |
| **No** | **RS Method**  | **RS Rate** |
| 1 | None | 1 |
| 2 | RS(15,2) | 2/15 |
| 3 | RS(15,4) | 4/15 |

**Table 5-1 – Offset VPWM FEC Outer Code Support**

The FEC support for Offset VPWM Inner Codes are given in Table 5-2.

|  |  |  |
| --- | --- | --- |
| **No** | **CS Method**  | **CS Rate** |
| 1 | None | 1 |
| 2 | CC(1/4) | 1/4 |
| 3 | CC(1/3) | 1/3 |
| 4 | CC(2/3) | CC(2/3) |

**Table 5-2 – Offset VPWM FEC Inner Code Support**

# **2. MAC PIP ATTRIBUTES FOR Offset-VPWM**

# **MAC PIB Attributes**

The MAC PIB comprises the attributes required to manage the MAC sublayer of a device. The attributes contained in the IEEE802.15.7-2011 MAC PIB are presented in Table 62 - MAC PIB Attributes.

The additional MAC PIB attributes added for Offset VPWM MAC for Smart Device Flash Light is presented the Table 100—MAC PIB attributes (continued).

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| --- |
| **MAC PIB Attributes Table 60 Additions** |
| **Attribute** | **Identifier** | **Type** | **Range** | **Description** | **Default** |
| macOffsetVPWMDataUsage | 0x81 | Unsigned | 0-255 | This attribute indicates the type of data transmitted using Flash Light Transmitter.0 : LED ID without IP address1 : LED ID with IP address 3 : Authentication Data | 0 |
| macOffsetVPWMStdPERIOD | 0x82 | Integer | 0-65535 | This attribute specify the standard PWM period used to transmit the data (in micro secs)  | 1 |
| macOffsetVPWMOffsetPERIOD | 0x83 | Integer | 0-65535 | This attribute specify the Variable offset PWM period used to transmit the data (in micro secs) | 0 |

**Table 100 — Offset-VPWM MAC PIB attributes (continued)**