

**Project: IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)**

**Submission Title:** [Comment resolution of No.35]

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**Re:** [Response to the SB 3<sup>rd</sup> recirculation for the IEEE 802.15.7 standard]

**Abstract:** [This document describes the comment resolution of No.35]

**Purpose:** [To provide the comment resolution of No.35]

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# Comment resolution of No.35

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# Comment No.35

Comment No.	Page	Subclause	Line	Comment	Proposed Change
35	227	8.6.4	38	It is beneficial to add the optional field for VPPM in order to indicate the VPPM symbol (VSk1 and VSk2 as shown in Figure 115) lengths.	Add the optional fields for the indication of VSk1 and VSk2 VPPM symbol lengths to subclauses of 8.6.4.

# Text changes #1 – Current D8 draft

- 8.6.2 PHY header

Table 81—PHY header

PHY header fields	Bit-width	Explanation on usage
Burst mode	1	Reduce preamble and IFS
Channel number	3	Band plan ID
MCS ID	6	Provide information about PHY type and data rate
PSDU length	16	Length up to <i>aMaxPHYFrameSize</i>
Dimmed OOK extension	1	Information on compensation time, resync and length of sub-frame
Reserved fields	5	Future use

# Text changes #1 – Suggestion

- 8.6.2 PHY header

Table 81 – PHY header

PHY header fields	Bit-width	Explanation on usage
Burst mode	1	Reduce preamble and IFS
Channel number	3	Band plan ID
MCS ID	6	Provide information about PHY type and data rate
PSDU length	16	Length up to <i>aMaxPHYFrameSize</i>
Dimmed OOK extension	1	Information on compensation time, resync and length of subframe
VPPM extension	1	Information on lengths of $VS_{k1}$ and $VS_{k2}$ VPPM symbols for high resolution dimming support in VPPM mode
Reserved fields	4	Future use

# Text changes #2 – Suggestion

- 8.6.2 PHY header

Table 82—Dimmed OOK extension

Extension fields	Bit-width	Explanation on usage
Compensation length	10	Compensation length in optical clocks
Resync length	4	Number of resync optical clocks
Subframe length	10	Length of subframe in optical clocks
OFCS	8	Optional field check sequence



Table xx – VPPM extension

Extension fields	Bit-width	Explanation on usage
$VS_{k1}$ symbol length	12	$VS_{k1}$ VPPM symbol length in optical clocks
$VS_{k2}$ symbol length	12	$VS_{k2}$ VPPM symbol length in optical clocks
OFCS for VPPM extension	8	Optional field check sequence for VPPM extension

# Text changes #3 – Suggestion

- 8.6.2 PHY header

The PHY header, as shown in Table 81, shall be transmitted with an OOK modulation. For PHY III, all light sources shall transmit the same header contents simultaneously within the error tolerance specified in 8.3.3 and the band plan ID field shall be set to be the band plan ID of the lowest wavelength. The MAC shall select the optical clock rate for communication during the clock rate selection process, as defined in 6.5. The PHY header shall be sent at the lowest data rate for the chosen optical clock rate. The clock rate does not change throughout the frame between the preamble, header and payload. If the dimmed OOK extension bit is set in the PHY header for dimming support, additional fields are transmitted after the PHY header as shown in Table 82.

*If the VPPM extension bit is set in the PHY header for high resolution dimming support in VPPM mode, additional fields are transmitted after the PHY header as shown in Table xx.*

# Text changes #4 – Suggestion

- 8.6.2 PHY header
  - 8.6.2.1 Burst mode
  - 8.6.2.2 Channel number
  - 8.6.2.3 MCS ID
  - 8.6.2.4 Length of PSDU field
  - 8.6.2.5 Dimmed OOK extension
  - 8.6.2.6 VPPM extension**

*The VPPM extension bit shall be set to one when supporting dimming while using VPPM modulation. The VPPM extension bit indicates that more optional fields are present at the end of the header. These fields are described in 8.6.4.7, 8.6.4.8, and 8.6.4.9.*



# Text changes #5 – Suggestion

- 8.6.4 Optional fields

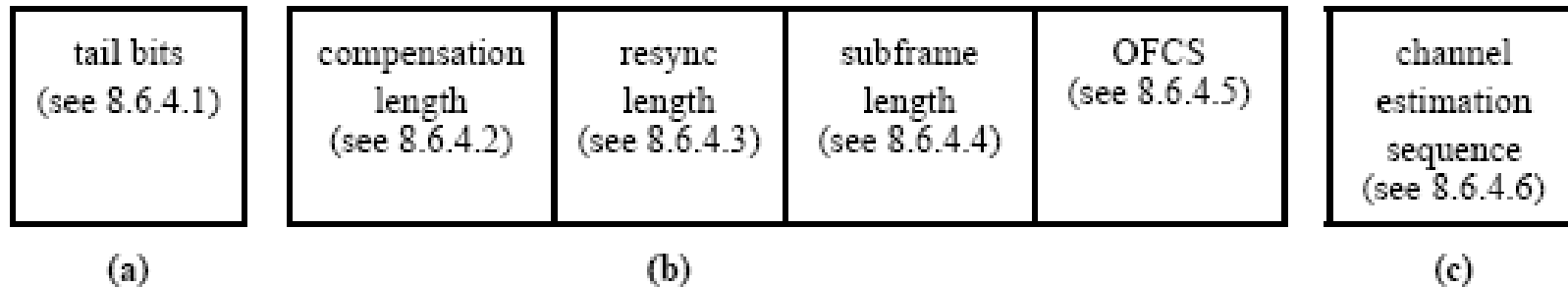
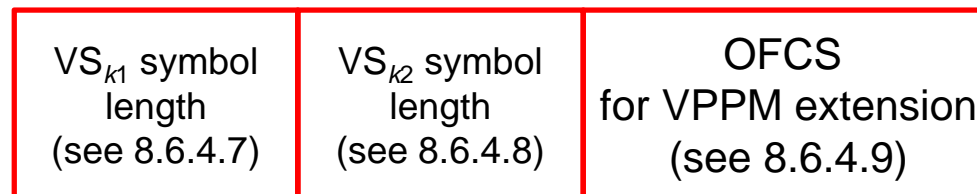


Figure 122—PPDU option fields

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(d)

# Text changes #6 – Suggestion

- 8.6.4 Optional fields

The optional fields shall be formatted as shown in Figure 122. The optional fields in Figure 122 (a) shall be transmitted only when PHY I is used with an optical clock of 200 kHz based on the MCS ID chosen in the PHR. The optional fields in Figure 122 (b) shall be transmitted after the tail bits only if the dimmed OOK bit is set in the PHR. The optional field in Figure 122 (c) shall be transmitted only if PHY III is selected based on the MCS ID chosen in the PHR. The dimmed OOK mode shall not be used with PHY III. i.e. the optional fields (b) and (c) shall never be used simultaneously. Optional fields (a) and (c) shall also never be transmitted simultaneously since they correspond to different PHY types.

*The optional fields in Figure 122 (d) shall be transmitted only when  $VS_{k1}$  and  $VS_{k2}$  VPPM symbols are used for the high resolution dimming in VPPM mode of PHY I and II.*

# Text changes #7 – Suggestion

- 8.6.4 Optional fields
  - 8.6.4.1 Tail bits
  - 8.6.4.2 Compensation length
  - 8.6.4.3 Resync length
  - 8.6.4.4 Subframe length and generation
  - 8.6.4.5 Optional field check sequence generation
  - 8.6.4.6 Channel estimation sequence
  - 8.6.4.7  $VS_{k1}$  VPPM symbol length
  - 8.6.4.8  $VS_{k2}$  VPPM symbol length
  - 8.6.4.9 Optional field check sequence generation for VPPM extension

# Text changes #8 – Suggestion

- **8.6.4.7  $VS_{k1}$  VPPM symbol length**

*The  $VS_{k1}$  length has a 12 bit value which indicates the value that is the number of  $VS_{k1}$  VPPM symbols at the optical clock rate times 0.1.  $VS_{k1}$  symbol is less brighter than  $VS_{k2}$  symbol. When used, this field shall be sent to set a value between 0 to 4095.*

- **8.6.4.8  $VS_{k2}$  VPPM symbol length**

*The  $VS_{k2}$  length has a 12 bit value which indicates the value that is the number of  $VS_{k2}$  VPPM symbols at the optical clock rate times 0.1.  $VS_{k2}$  symbol is more brighter than  $VS_{k1}$  symbol. When used, this field shall be sent to set a value between 0 to 4095.*

- **8.6.4.9 Optional field check sequence generation for VPPM extension**

*The PPDU optional field check sequence (OFCS) value for VPPM extension is calculated as described in 8.6.4.5.*