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

Submission Title: [Resolution for the initial SB comment No.3]
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Re: [Response to the initial SB for the IEEE 802.15.7 standard]

Abstract: [This document describes the resolution on the initial SB comment No.3]

Purpose: [To provide the resolution on the initial SB comment No.3]

Resolution for the initial SB comment No.3

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Comment No.3

Comment No.	Name	Page	Subclause	Line	Comment	Proposed Change
3 (line 54)	Rajagopal, Sridhar	16	4.4.3.2.1	10	4.4.3.2.1 refers to 8.5.3 which refers to 4.4.3.2	fix circular reference

- 4.4.3.2.1 Intra-frame flicker mitigation
  - Intra-frame flicker mitigation is accomplished by either the use of run length limiting coding, modulation scheme, or both. Specifically, these schemes are manchester encoding as specified in 10.5.2, 4B6B encoding as specified in 10.5.1, 8B10B encoding as specified in 11.3 or VPPM as specified in 8.5.3.
- Main issue
  - 8.5.3 does not specify the VPPM definition, either.
  - No place for the VPPM specification in D4.

Benchmark source for resolution

12. PHY III specification
    - 12.1 Reference modulator diagram
    - 12.2 Scrambler
    - 12.3 Channel encoder
    - 12.4 CSK constellation overview
    - 12.5 CSK constellation design rules
    - 12.6 Data mapping for CSK
    - 12.7 Valid color band combinations
    - 12.8 CSK color mapping
    - 12.9 CSK calibration at the receiver

Key points for resolution

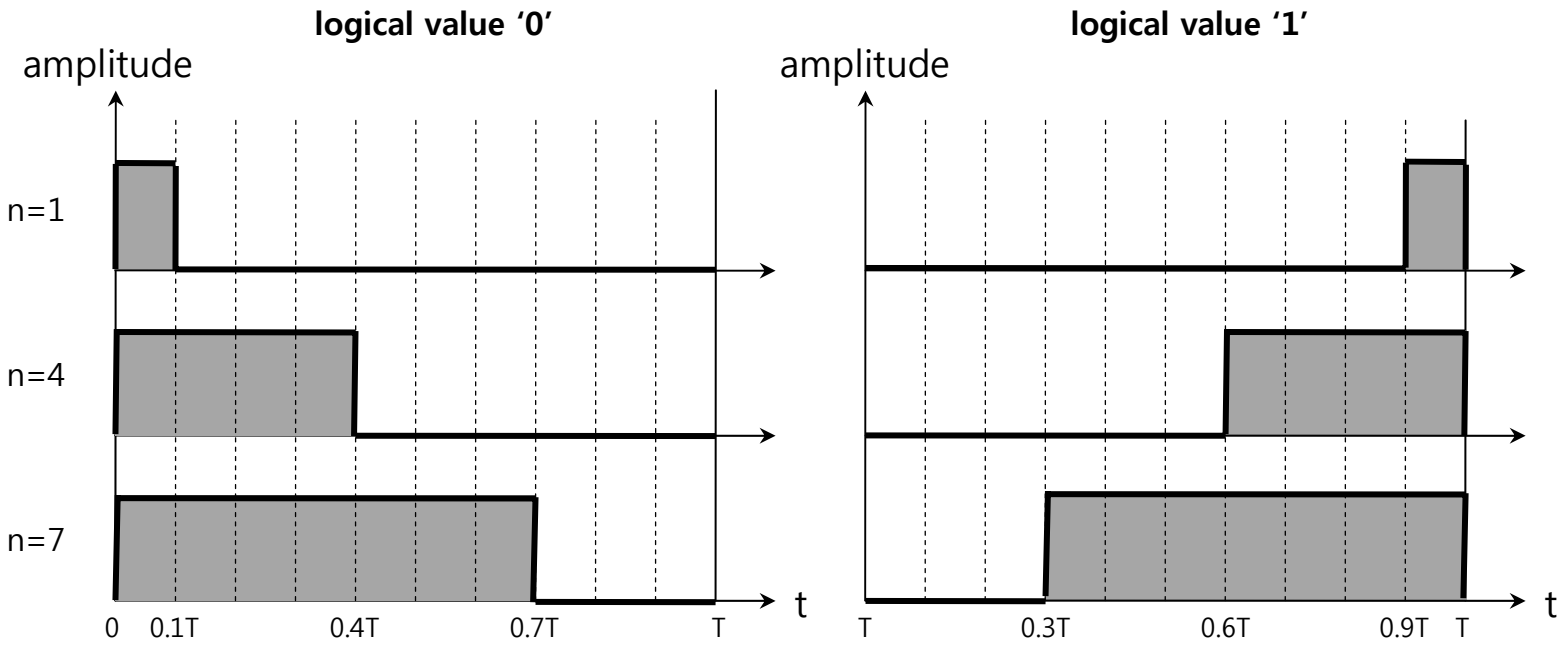
10. PHY I specification
    - 10.1 Reference modulator diagram
    - 10.2 Outer forward error correction encoder
    - 10.3 Interleaving and puncturing block
    - 10.4 Inner forward error correction encoder
    - 10.5 Run-length limiting encoder
    - 10.6 Data mapping for VPPM

11. PHY II specification
    - 11.1 Reference modulator diagram
    - 11.2 Forward error correction encoder
    - 11.3 Run-length limiting encoder
    - 11.4 Data mapping for VPPM

Resolution details - Figures

Logical value	Physical value	
0	High (LED on)	$0 \le t < 0.1 \times nT$
	Low (LED off)	$0.1 \times nT \le t < T$
1	Low (LED off)	$0 \le t < (1-0.1 \times n)T$
	High (LED on)	$(1-0.1 \times n)T \le t < T$

n is the required VPPM dimming level and integer (0<n<10)



Resolution details – Text for 10.6

- The data mapping for VPPM mode in PHY I is shown in Table xx and Figure xx. The data mapping for VPPM shall be defined as Table xx. The physical value mapped from the logical data “0” has a transition from ‘high’ to ‘low’ and the physical value mapped from the logical data “1” has a transition from ‘low’ to ‘high’ as shown in Table xx and Figure xx. ‘n’ in Table xx is the dimming level required only by VPPM and a integer within the range of 1 to 9 (or 0 to 10, I’m not sure) so that VPPM modulated signals can support 10% dimming resolution only by VPPM. Figure xx shows the examples of the VPPM modulated waveform when the dimming levels, n, are 1, 4, and 7, respectively.
- Table caption : Table xx – Definition of data mapping for VPPM mode in PHY I
- Figure caption : Figure xx - Examples of the VPPM modulated waveforms in PHY I representing logical data ‘0’ and ‘1’

Resolution details – Text for 11.4

- The data mapping for VPPM mode in PHY II is shown in Table yy and Figure yy. The data mapping for VPPM shall be defined as Table yy. The physical value mapped from the logical data “0” has a transition from ‘high’ to ‘low’ and the physical value mapped from the logical data “1” has a transition from ‘low’ to ‘high’ as shown in Table yy and Figure yy. ‘n’ in Table yy is the dimming level required only by VPPM and a integer within the range of 1 to 9 (or 0 to 10, I’m not sure) so that VPPM modulated signals can support 10% dimming resolution only by VPPM. Figure yy shows the examples of the VPPM modulated waveform when the dimming levels, n, are 1, 4, and 7, respectively.
- Table caption : Table yy – Definition of data mapping for VPPM mode in PHY II
- Figure caption : Figure yy - Examples of the VPPM modulated waveforms in PHY II representing logical data ‘0’ and ‘1’