

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

Submission Title: [revised capability bits for MCSs]

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Re: [In response to TG3c comments (IEEE P802.15-08-0020-05-003c)]

Abstract: [Comment resolutions]

Purpose: [To be considered in TG3C baseline document.]

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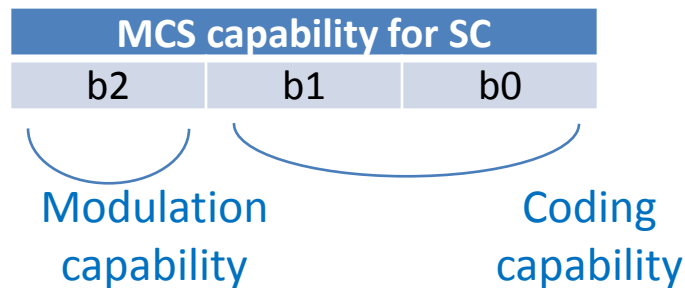
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Revised Resolution to Comment #9

- Summary
 - Necessary capability bits for MCSs in SC-PHY have been reduced into 3 bits from 7 bits due to bit mapping reconfiguration
- Comment #9
 - How do we encode all of the supported data rates.
- Resolution
 - By using $8=3+1+4$ bit field in DEV capabilities field all of the supported data rates for three PHY mode are encoded as in the current discussion below
 - 3 bits in SC case: reduced from 7 bits in the previous resolution
 - 1 bits for AV-OFDM case
 - 4 bits for HSI-OFDM case: reduced from 6bits in the previous resolution

Capability bits in SC case

- By using $3 = 1(\text{for modulation scheme}) + 2(\text{for coding scheme})$, MCS in SC case can be encoded
 - 1 bit for 8QAM&16QAM capability
 - 2 bits for coding capability as for LDPC



Modulation capability	[b2]
BPSK + QPSK	0
BPSK + QPSK + 8QAM + 16QAM	1
Coding capability	[b1-b0]
RS (255,239)	00
RS (255,239) + LDPC (576,288)	01
RS (255,239) + LDPC (576,288) + LDPC (576,432) + LDPC (576,504)	10
RS (255,239) + LDPC (576,288) + LDPC (576,432) + LDPC (576,504) + LDPC (1440,1344)	11

Appendix

MCSs in three PHY cases

MCSs in SC

MCS Class	MCS ID	PHY-SAP rate (Mbs)	Modulation Scheme	Spreading factor	FEC Type	FEC Rate
Class 1	LR1	50.6(CR)/379.6/ 759.2/1518.4(MLR)	p/2-BPSK/(G)MSK	32/4/2/1	RS(255,239)	0.937
	LR2	607.5/1215.0	p/2-BPSK/(G)MSK	2/1	LDPC(576,432)	0.750
	LR3	810.0	p/2-BPSK/(G)MSK	1	LDPC(576,288)	0.500
Class 2	MR1	1620.0	p/2-QPSK	1	LDPC(576,288)	0.500
	MR2	2430.0	p/2-QPSK	1	LDPC(576,432)	0.750
	MR3	2835.0	p/2-QPSK	1	LDPC(576,504)	0.875
	MR4	3024.0	p/2-QPSK	1	LDPC(1440,1344)	0.933
	MR5	3036.7	p/2-QPSK	1	RS(255,239)	0.937
Class 3	HR1	4555.1	p/2-Star 8QAM	1	RS(255,239)	0.937
	HR2	6073.4	p/2-16QAM	1	RS(255,239)	0.937
Class 4	OOK1	1518.4/759.2	OOK	1/2	RS(255,239)	0.937
4	DRB1	3036.7	Dual Rail Bipolar	1	RS(255,239)	0.937