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

Submission Title: [Proposals for Amendments to the DSSS PHY of LECIM draft 15-12-0089-02-004k]

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Re: []

Abstract: []

Purpose: [To assist with the definition of the 15.4k FSK PHY of the LECIM draft standard]

DSSS PHY Amendments

- Add Additional channels for 863 – 870 MHz band PHY

- Section 19.1.2 Modulation and Spreading
- 19.1.2.1 Data Rate
  - Table 73 indicates that entire 863-870 MHz band is available for DSSS LECIM

PHY (MHz)	Frequency band (MHz)	Region/availability	Chip rate (kchip/s)	Modulation
868	863–870	EU/CEPT	100	BPSK/O-QPSK

  - Only 3 channels allocated
    - Channel 0: 868.3 MHz - 600 kHz
    - Channel 1: 868.95 MHz - 500 kHz
    - Channel 2: 869.525 MHz - 250 kHz
- Following proposal will provide additional 5 * 600 kHz channels for DSSS PHY

- Section 19.1.2 Modulation and Spreading
- 19.1.2.1 Data Rate
  - Current LECIM DSSS Channel allocation

Frequency Bands/frequencies	Applications	Maximum radiated power, e.r.p. / power spectral density	Channel spacing	Spectrum access and mitigation requirement (e.g. Duty cycle or LBT + AFA)
868,000 MHz to 868,600 MHz (see note 4)	Non-specific use	25 mW	No requirement (see note 6)	1 % or LBT + AFA (see note 3)
868,700 MHz to 869,200 MHz (see note 4)	Non-specific use	25 mW	No requirement (see note 6)	0,1 % or LBT + AFA (see note 3)
869,400 MHz to 869,650 MHz	Non-specific use	500 mW	≤25 kHz The whole stated frequency band may be used as 1 wideband channel for high speed data transmission	10 % or LBT + AFA (see note 3)

- Notes
  - NOTE 3: For LBT devices without Adaptive Frequency Agility (AFA) or equivalent techniques, the duty cycle limit applies.
  - NOTE 4: Devices supporting audio and video applications shall use a digital modulation method with a maximum bandwidth of 300 kHz. Devices supporting analogue and/or digital voice shall have a maximum bandwidth not exceeding 25 kHz.
  - NOTE 6: The preferred channel spacing is 100 kHz allowing for subdivision into 50 kHz or 25 kHz.

- Section 19.1.2 Modulation and Spreading
- 19.1.2.1 Data Rate
  - Duty cycle limitations for Channel 1 may limit suitability for beacon enabled networks
  - Channel 2 shared with 500 mW (+27 dBm) NB systems
- Add the following channels
  - Channel 0: 865.3 MHz
  - Channel 1: 865.9 MHz
  - Channel 2: 866.5 MHz
  - Channel 3: 867.1 MHz
  - Channel 4: 867.7 MHz

Sub-band	Maximum Occupied bandwidth	Maximum radiated power density e.r.p.	Duty cycle
865 MHz to 868 MHz	0,6 MHz	6,2 dBm / 100 kHz	1 %

  - Renumber channels 0-2 of LECIM draft channel 5-7