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Attestation

FCC Justification Statement about Compliance for FHSS Device

FCC ID: SZO-RR21

FCC Rule Part Section: FCC 15.247(a)(1)

i) Pseudorandom frequency hopping sequence

Describe how the hopping sequence is generated. Provide an example of the hopping sequence channels, to demonstrate that the sequence meets the requirement specified in the definition of an FHSS system, found in Section 2.1(c). Per the definition in Section 2.1(c), the hop set shall appear as random in the near term, shall appear as evenly distributed in the long term, and sequential hops shall be randomly distributed in both direction and magnitude of change.

Response: The channel center frequencies of this device range from 902.75 MHz to 927.25 MHz. It uses 50 hopping channels with a 20 dB BW less than 250 kHz separated by 500 kHz.

ii) Equal hopping frequency use

Describe how each individual EUT meets the requirement that each of its hopping channels is used equally on average (e.g., that each new transmission event begins on the next channel in the hopping sequence after the final channel used in the previous transmission event).

Response: A set of 50 random channels is shuffled with a true random generator peripheral. This list is then used sequentially for the next 50 transmissions. After going through the set of 50 channels, the next set is shuffled. To avoid shuffling the last channel as the first of the next set, shuffling is redone in this case.

iii) System receiver input bandwidth

Describe how the associated receiver(s) complies with the requirement that the input bandwidth (either RF or IF) matches the bandwidth of the transmitted signal.

Response: All 50 channels are evenly used by the mechanism shown in clause ii.

iv) System receiver hopping capability Describe how the associated receiver(s) has the ability to shift frequencies in synchronization with the transmitted signals.

Response: The LF bandwidth of the receiver is 350kHz centered at 0 Hz (direct conversion) followed by digital filtering in the digital part of the receiver. The bandwidth of the digital filter depends on the tag data rate on the air interface.

If you have any questions, please feel free to contact me

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