EMC Technologies Pty Ltd
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	Frequency hopping spread spectrum system (Lock and Base Station) operational requirements:
1.	Describe whether the carrier is modulated with the coded information in a conventional manner causing a conventional spreading of the RF energy about the frequency carrier *(Notes: system that employs useless modulation just to meet the paragraph (a)(1) TX/RX bandwidth requirement does not meet the intent of Section 2.1)*
	The system uses the GFSK modulation method
2.	Provide a sample of a few hop sequences (at least two). Each sequence must have a minimum number of hops (i.e. a minimum number of channel changes), such as 8 to 15 channel changes.
	First hop sequence: 2465 2420 2415 2420 2475 2465 2460 2465 2445 2435 2470 2455 2480 2420 2420 2410 2455 2405 (MHz) Second hop sequence: 2465 2455 2470 2450 2415 2460 2410 2440 2425 2475 2420 2470 2425 2410 2475 2460 2455 2445 (MHz)
3.	Provide a description of how the pseudorandom hop sequence is generated
	The pseudorandom sequence is generated using ANSI C and ARM random number generators (RNG)
4.	Describe how the near term distribution of hops appears random
	The not repeating cycle of hops is about 2,000,000,000
5.	Describe how the long term distribution appears evenly distributed over the hop set. *(Notes: Each individual EUT must meet 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). The long term distribution of the sequence must be uniform (i.e. equal probability mass function), and all channels must have an equal probability of selection once all channel numbers are randomly generated.)*
	Uniformly and evenly distributed
6.	Describe how the sequential hops are randomly distributed in both direction and magnitude of change in the hop set.
	Uniformly and evenly distributed
7.	System Receiver Input Bandwidth - Describe how the associated receiver(s) complies with the requirement that its input bandwidth (either RF or IF) matches the bandwidth of the transmitted signal.
	The match is automatically provided by nRF24LE1 hardware as the same data rate of 2Mbps is chosen by software on both RX and TX
8.	System Receiver Hopping Capability - Describe how the associated receiver(s) has the ability to shift frequencies in synchronization with the transmitted signals.
	The RX and TX are synchronized in time and the same RNG and seed is used for both of them

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9.	Describe how the system, consisting of both the transmitter and the receiver, is designed to comply with all of the regulations in this Part should the transmitter be presented with a continuous data (or information) stream.
	The time of occupancy is restricted and a random frequency pattern is used
10.	Describe how a system employing short transmission bursts complies with the definition of a frequency hopping system and distributes its transmissions over the minimum number of hopping channels specified in this Part
	The system operates at 16 frequencies from 2405 to 2480 MHz separated by 5 MHz and uses a random frequency pattern
11.	Describe how the EUT complies with the requirement that it does not have the ability to be coordinated with other FHSS systems in an effort to avoid the simultaneous occupancy of individual hopping frequencies by multiple transmitters.
	The set of 16 frequencies is fixed, the choice of the next frequency of operation is completely random and does not depend on any external event.
12.	Compliance with carrier frequency separation requirement
	Compliance
13.	Compliance with the minimum number of hopping frequencies requirement
	Compliance
14.	Compliance with the time of occupancy (dwell time) requirement
	Compliance
15.	Compliance with the occupied bandwidth requirement
	Compliance

Sincerely,

Nikolai Klepikov
Senior Electronics Design Engineer

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