

	Frequency hopping spread spectrum system 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 device 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: The frequency randomly selects 16 frequencies.
	Second hop sequence: The frequency randomly selects 16 frequencies.
3.	Provide a description of how the pseudorandom hop sequence is generated
	Select frequency by different hopping sequence seed for each specified group.
4	Describe how the near term distribution of hops appears random
	The interval of the selected frequency is at least 4 MHz.
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.)
	The frequency selection algorithm for hopping is as follows.
6	Describe how the sequential hops are randomly distributed in both direction and magnitude of change in the hop set.
	It generates a random number using a Gold code generator and Using a random number to select the frequency.
7	<p>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.</p> <p>source code is as follows :</p> <pre> unsigned int Modem_HoppingSeqGen(unsigned int seqn, unsigned int cnt) { unsigned int i; unsigned int num_of_ones; for(i = 0; i < cnt; i++) { num_of_ones = 0; if (seqn & (1u << 31)) num_of_ones++; if (seqn & (1 << 21)) num_of_ones++; if (seqn & (1 << 1)) num_of_ones++; if (seqn & (1 << 0)) num_of_ones++; if(num_of_ones & (1 << 0)) seqn = (seqn << 1) (1 << 0); else seqn = (seqn << 1) & ~(1 << 0); } return seqn; } </pre>

	<p>The following is the actual selected frequency hopping sequence.</p> <pre> hopping channel : 14 hopping channel : 19 hopping channel : 16 hopping channel : 4 hopping channel : 18 hopping channel : 0 hopping channel : 11 hopping channel : 2 hopping channel : 10 hopping channel : 1 hopping channel : 6 hopping channel : 5 hopping channel : 7 hopping channel : 15 hopping channel : 19 hopping channel : 11 hopping channel : 20 hopping channel : 10 hopping channel : 2 hopping channel : 21 hopping channel : 20 hopping channel : 17 hopping channel : 6 hopping channel : 1 hopping channel : 12 hopping channel : 13 hopping channel : 11 hopping channel : 2 hopping channel : 9 hopping channel : 13 hopping channel : 9 hopping channel : 19 hopping channel : 6 hopping channel : 5 </pre>
8	<p>System Receiver Hopping Capability – Describe how the associated receiver(s) has the ability to shift frequencies in synchronization with the transmitted signals.</p> <p>The selected frequency propagates using the beacon signal.</p>
9	<p>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.</p> <p>The hopping sequence seed is also included in the beacon signal.</p>
10	<p>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</p> <p>The transmitted hopping sequence seed is used to select the frequency to use in the frequency selection algorithm.</p>
11	<p>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.</p> <p>Compliance.</p>
12	<p>Compliance with carrier frequency separation requirement</p> <p>Compliance.</p>
13	<p>Compliance with the minimum number of hopping frequencies requirement</p> <p>Compliance.</p>
14	<p>Compliance with the time of occupancy (dwell time) requirement</p> <p>Compliance.</p>
15	<p>Compliance with the occupied bandwidth requirement</p> <p>Compliance.</p>