sensolus

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FCC ID: 2AQYP-3ABGPSW
Product Description: StickNTrack
**Model: SNT3**

Table for Carrier Frequencies

CH	Freq. (MHz)	CH	Freq. (MHz)	CH	Freq. (MHz)	CH	Freq. (MHz)	CH	Freq. (MHz)	CH	Freq. (MHz)	CH	Freq. (MHz)
0	902.1375	10	902.5375	20	903.0875	30	903.6375	40	904.0375	50	904.5875		
1	902.1625	11	902.5625	21	903.1125	31	903.6625	41	904.0625	51	904.6125		
2	902.1875	12	902.7375	22	903.1375	32	903.6875	42	904.2375	52	904.6375		
3	902.2125	13	902.7625	23	903.1625	33	903.7125	43	904.2625	53	905.2		
4	902.2375	14	902.7875	24	903.3375	34	903.7375	44	904.2875				
5	902.2625	15	902.8125	25	903.3625	35	903.7625	45	904.3125				
6	902.4375	16	902.8375	26	903.3875	36	903.9375	46	904.3375				
7	902.4625	17	902.8625	27	903.4125	37	903.9625	47	904.3625				
8	902.4875	18	903.0375	28	903.4375	38	903.9875	48	904.5375				
9	902.5125	19	903.0625	29	903.4625	39	904.0125	49	904.5625				

Hopping Sequence

MODULATION SCHEME

In the SIGFOX FCC modulation scheme, channel frequencies are distributed into 9 groups of 6 channels. Each group's center frequency is separated from the other by 300kHz and inside a group, each channel's center frequency is separated from the other by 25kHz, as required by part 15.247.
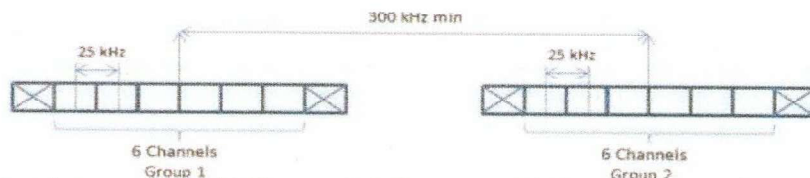
A frame lasts between 200 and 350 ms, and shall not exceed 400ms. Contiguous frames are not transmitted on the same frequency and follow a frequency hopping sequence over fifty-four 25 KHz channels spread over around 2.6 MHz of spectrum. More than 22 seconds are needed to run through the 54 channels so that a return to a given channel cannot occur before 20 seconds as per FCC 15.247 for continuous transmission.

PSEUDO RANDOM HOPPING SEQUENCE

When transmitting continuously, device radios will hop over 54 frequency channels. **They will select the transmit frequency from a pseudorandom sequence (PRBS-7 generator) stored in a frequency hopping table.** This ensures the equally usage of all channels. The dwell time is between 200 to 350ms per channel, well within the 400ms limit required by section 15.247(a)(1)(i) of the regulation.

Coordination of hopping sequences to other transmitters

This transmitter does not have the ability of being coordinated with other FHSS system for as soon as the transmitter is in operation, the hopping frequency will follow the selected hopping sequence to transmit independently and no coordination is possible. Especially, this transmitter is used as a duplex car alarm system, so no coordination of hopping frequency is required.

System Receiver Hopping Capability

There are two steps to make the receiver to shift the frequencies in synchronization with the transmitted signals:

First, the Transmitter will emit a preamble signal of 50ms and the receiver will scan this signal by 2ms sweeping until the preamble signal is caught. Second, the preamble signal is coded with the information of hopping sequence and the next transmitting frequency, so the receiver will be able to shift the receiving frequencies in synchronization with the transmitted signals.

Equal Hopping Frequency Use

Due to each hopping frequency will be transmitted in accordance to the frequency tables described above, there is no any frequency will be able to hop more times than others. Therefore each frequency will be used equally.

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