1.1 Technical description

The device is a complete RF transceiver, it has its own reference oscillator and permanently attached antenna. The only connectors are power supply and data inputs. The device has its own RF shielding. The data inputs are buffered.

The EUT operates with DC voltage of 9 to 30 vdc. Current consumption is maximum 150 ma.

When the transceiver transmits a frame with different frequency every 380 msec. The frequency is changed on a predetermined, pseudo random pattern according to the table in Attachment 3. There are 51 different frequencies in the list. The occupancy time on any frequency is 380 msec. The cycle period is 51*380msec which is 19.38 second.

The transmission frame is divided to 19 time slots 20 msec each. The second and the last slot are not used. The first time slot is used for one beacon transmission of 5.8 msec and a command of up to 7 msec. The other active time slots contain only the beacon and leave the slot open for the response. This mean that the maximum Tx on time is 17*5.8 + 7 = 106 msec, which is 28% duty cycle.

The data is transferred to or from the transceiver by serial communication with baud rate of 28800.

The transceiver include a CPU. The CPU is buffer for the data inputs. It receives the data from the user at any time and sends it at the correct time slot to the transceiver.

The module transceiver its own RF shield and cable dipole antenna without connector. The output power is constant 24 dbm.

Hopping transceiver statements (FCC 15.247 only)

Frequency Hopping Parameters

The station constantly transmits a transmission frame constracted from a synchronization beacon and commands. Each transmission frame is transmitted at different frequency (1 out of 51).The transmission frame is divided to 19 time slots (20 ms each) out of which the second and the last are not used. The first slot is used for one beacon transmission of 4 ms and a command of up to 7 ms. The other active time slots contain only the beacon and leave the slot open for the response. The occupancy time on any frequency is 380 ms within a 19.38 second period. This is under the limit of section 15.247(a)1. The FH carrier hops on a predetermined, pseudo random pattern (see table below).

All channels are used equally

Frequency Hopping Sequence Table

Frequency [MHz]	Frequency Assignment	Frequency [MHz]	Frequency Assignment
919.456	18	916.896	8
918.944	16	922.272	29
922.016	28	914.848	0
916.64	7	926.88	47
918.432	14	920.224	21
920.992	24	915.872	4
917.408	10	922.784	31
919.712	19	921.76	27
926.368	45	924.832	39
917.664	11	924.32	37
925.856	43	927.648	50
922.528	30	921.504	26
919.164	17	923.808	35
920.48	22	924.576	38
915.36	2	925.344	41
916.128	5	915.104	1
919.968	20	915.616	3
918.176	13	925.6	42
925.088	40	917.152	9
923.040	32	916.384	6
923.552	34	917.92	12
926.112	44	923.296	33
924.064	36	918.688	15
926.624	46	920.736	23
921.248	25	916.896	48
927.392	49		

Receiver compliance with 15.247 (a)(1) / 2.1033(a)(10)

The system receiver has input bandwidth that matches the hopping bandwidth of the corresponding transmitters. The receiver shifts its frequency in accordance with the same frequency hopping table and pattern as the transmitters.

Transmitter compliance with 15.247(h)

The equipment fully complies with the requirements of this section. There is no coordination between the systems to avoid simultaneous occupancy of the hopping frequencies by multiple transmitters. Each transmitter operates independently and there is no synchronization with other transmitters.