Operational Description, Transceiver FHSS

Pseudorandom Frequency Hopping Sequence

The hopping sequence is stored in a pseudo randomly generated transmit/receive frequency pair table.
Example:

Pos. In list	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Channel	1	34	31	44	14	32	25	45	13	18	50	11	23	41	4	47	42	36	35	21	3	48	33	30	49	28	2	17	15	37	6	19	43	38	26	20	9	24	12	46	16	40	27	7	10	22	8	29	5	39

Channel 1 TX freq. = 903.4125 MHz, RX freq. = 903.4375 MHz
Channel separation: 100 kHz
Number of channels used for FHSS: 50
Resulting bandwidth: 100 kHz x 50 = 5 MHz

Equal Hopping Frequency Use

Communication is initiated over the acquisition channel, where the transmitter tells the receiver which channel to start the data transmission on. Each time a new session is initiated the starting channel is the next position from the table from where the transmitters last session ended, whereby utilizing all channels over time.

System Receiver Input Bandwidth

The hopping sequence for the receiver is stored in a pseudo randomly generated receive/transmit frequency pair table of the same order and size as the system transmitter which is followed in sync with the transmitter.
Example:

Pos. In list	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Channel	1	34	31	44	14	32	25	45	13	18	50	11	23	41	4	47	42	36	35	21	3	48	33	30	49	28	2	17	15	37	6	19	43	38	26	20	9	24	12	46	16	40	27	7	10	22	8	29	5	39

Channel 1 RX freq. = 903.4125 MHz, TX freq. = 903.4375 MHz
Channel separation: 100 kHz
Number of channels used for FHSS: 50
Resulting input bandwidth: 100 kHz x 50 = 5 MHz

System Receiver Hopping Capability

Time synchronization is achieved by using a fixed hop-rate at the transmitter and receiver. The receiver count the bits to decide when to hop to the next channel in the frequency pair table.