

In the initial acquisition, the receiver device will broadcast the Beacon, which also used random hopping sequence.

Assuming ID is given as 0x66, Token is in the range [102, 117]. Since there are sixteen numbers in the Token, so we can generate sixteen random numbers using the above architecture.

$$k = \{90, 108, 33, 51, 108, 48, 105, 45, 102, 42, 75, 93, 72, 90, 69, 87\}$$

These sixteen numbers are used to map RF channels using $2370 + k$ MHz. This generator can generate k in the range {33, 36 ..., 108}. This can ensure that the location of channel is in the range 2403~2478 MHz and the spectral distance of adjacent channels is larger than 3 MHz. Since the size of Token is 16 bits, the generator sequence will be periodical with maximum period equal to 2^{16} hops.

Using the above random sequence generator and ID 0x66, we empirically generate the following hopping table for FCC review.

	1	2	3	4	5	6	7	8	9	10
1	90	108	33	51	108	48	105	45	102	42
2	75	93	72	90	69	87	66	84	87	105
3	84	102	81	99	78	96	90	108	93	33
4	96	36	99	39	102	42	105	45	108	48
5	33	51	66	84	69	87	72	90	75	93
6	78	96	81	99	84	102	87	105	60	78
7	63	81	66	84	69	87	72	90	75	93
8	78	96	81	99	36	54	39	57	42	60
9	45	63	48	66	51	69	54	72	57	75
10	63	81	60	78	69	87	66	84	75	93
11	72	90	81	99	78	96	39	57	36	54
12	45	63	42	60	51	69	48	66	57	75
13	54	72	33	51	108	48	39	57	36	54
14	45	63	42	60	51	69	48	66	87	105
15	84	102	93	33	90	108	99	39	96	36
16	105	45	102	42	48	66	51	69	42	60
17	45	63	36	54	39	57	108	48	33	51
18	102	42	105	45	96	36	99	39	90	108
19	93	33	84	102	87	105	96	36	99	39
20	90	108	93	33	84	102	87	105	78	96

21	81	99	72	90	75	93	66	84	69	87
22	60	78	63	81	54	72	57	75	99	39
23	96	36	93	33	90	108	87	105	84	102
24	81	99	78	96	75	93	72	90	69	87
25	66	84	63	81	60	78	57	75	54	72
26	69	87	66	84	63	81	60	78	57	75
27	54	72	51	69	48	66	45	63	42	60
28	39	57	36	54	33	51	108	48	105	45
29	102	42	60	78	63	81	66	84	69	87
30	48	66	51	69	54	72	57	75	36	54
31	39	57	42	60	45	63	102	42	105	45
32	108	48	33	51	108	48	33	51	36	54
33	39	57	96	36	99	39	102	42	105	45
34	84	102	87	105	90	108	93	33	72	90
35	75	93	78	96	81	99	33	51	108	48
36	39	57	36	54	99	39	96	36	105	45
37	102	42	87	105	84	102	93	33	90	108
38	75	93	72	90	81	99	78	96	81	99
39	78	96	87	105	84	102	69	87	66	84
40	75	93	72	90	57	75	54	72	63	81
41	60	78	45	63	42	60	51	69	48	66
42	48	66	51	69	42	60	45	63	60	78
43	63	81	54	72	57	75	72	90	75	93
44	66	84	69	87	84	102	87	105	78	96
45	81	99	96	36	99	39	90	108	93	33
46	108	48	33	51	102	42	105	45	42	60
47	45	63	36	54	39	57	54	72	57	75
48	48	66	51	69	99	39	96	36	93	33
49	90	108	33	51	108	48	105	45	102	42
50	45	63	42	60	39	57	36	54	57	75
51	54	72	51	69	48	66	69	87	66	84
52	63	81	60	78	81	99	78	96	75	93
53	72	90	93	33	90	108	87	105	84	102
54	105	45	102	42	99	39	96	36	60	78
55	63	81	66	84	69	87	72	90	75	93
56	78	96	81	99	84	102	87	105	90	108
57	93	33	96	36	99	39	102	42	105	45

58	108	48	33	51	36	54	39	57	42	60
59	45	63	48	66	51	69	54	72	57	75
60	60	78	63	81	66	84	69	87	72	90
61	75	93	33	51	108	48	39	57	36	54
62	45	63	42	60	51	69	48	66	57	75
63	54	72	63	81	60	78	69	87	66	84
64	75	93	72	90	81	99	78	96	87	105
65	84	102	93	33	90	108	99	39	96	36
66	105	45	102	42	33	51	108	48	39	57
67	36	54	45	63	42	60	96	36	99	39
68	90	108	93	33	84	102	87	105	78	96
69	81	99	42	60	45	63	36	54	39	57
70	108	48	33	51	102	42	105	45	66	84
71	69	87	60	78	63	81	54	72	57	75
72	48	66	51	69	90	108	93	33	84	102
73	87	105	78	96	81	99	72	90	75	93
74	69	87	66	84	63	81	60	78	57	75
75	54	72	51	69	48	66	93	33	90	108
76	87	105	84	102	81	99	78	96	75	93
77	72	90	39	57	36	54	33	51	108	48
78	105	45	102	42	99	39	96	36	63	81
79	60	78	57	75	54	72	51	69	48	66
80	45	63	42	60	108	48	33	51	36	54
81	39	57	96	36	99	39	102	42	105	45
82	54	72	57	75	60	78	63	81	42	60
83	45	63	48	66	51	69	78	96	81	99
84	84	102	87	105	66	84	69	87	72	90
85	75	93	102	42	105	45	108	48	33	51
86	90	108	93	33	96	36	99	39	81	99
87	78	96	87	105	84	102	69	87	66	84
88	75	93	72	90	105	45	102	42	33	51
89	108	48	93	33	90	108	99	39	96	36
90	51	69	48	66	57	75	54	72	39	57
91	36	54	45	63	42	60	75	93	72	90
92	81	99	78	96	63	81	60	78	69	87
93	66	84	36	54	39	57	108	48	33	51
94	48	66	51	69	42	60	45	63	90	108

95	93	33	84	102	87	105	102	42	105	45
96	96	36	99	39	66	84	69	87	60	78
97	63	81	78	96	81	99	72	90	75	93
98	42	60	45	63	36	54	39	57	54	72
99	57	75	48	66	51	69	87	105	84	102
100	81	99	78	96	99	39	96	36	93	33

We also plot a figure based on the above random sequence. As you can see, the distribution of this sequence is quite uniformly located in these 26 targeted channels.

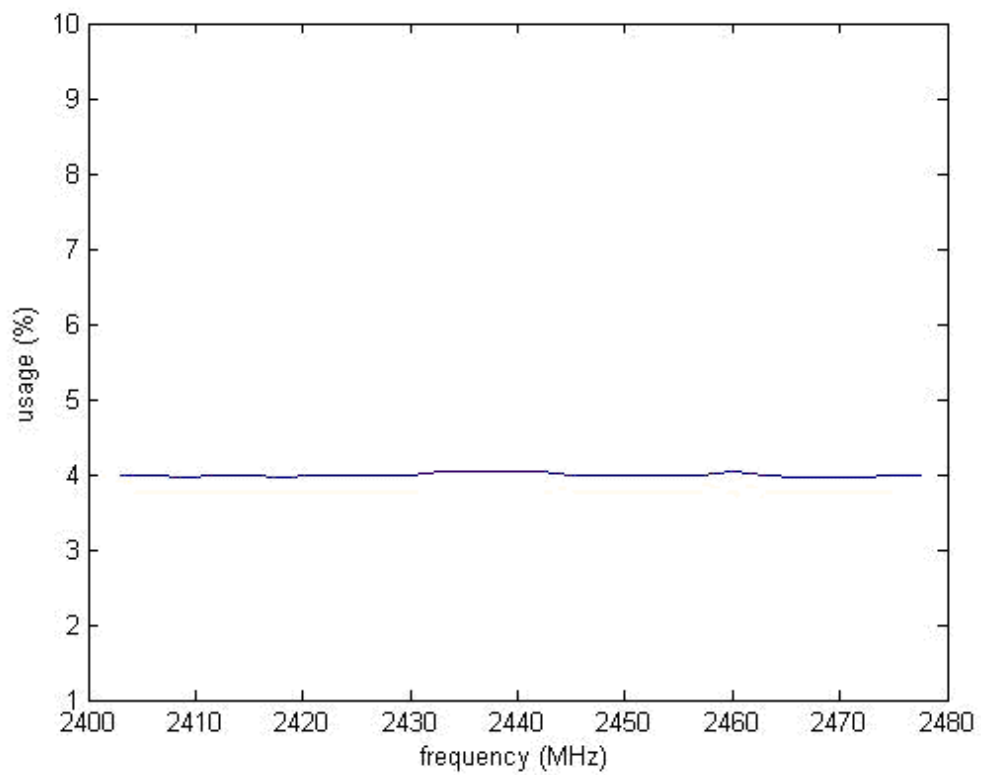


Figure 2 Channel distributions using random sequence generator