

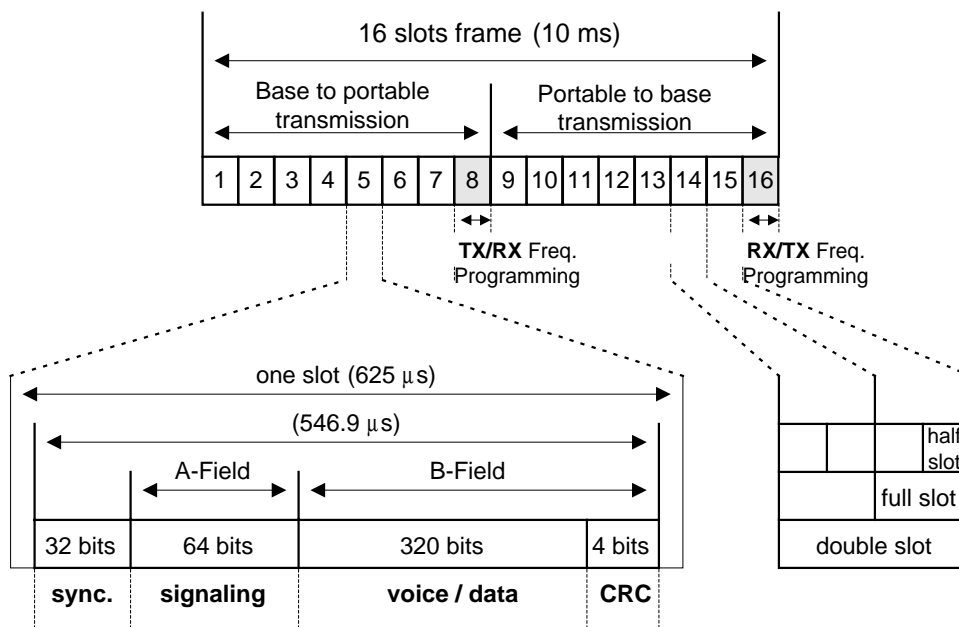
# ISM DECT Protocol Description

The standard DECT protocol has been modified to comply with the ISM band requirements. This new protocol's characteristics are:

Number of bi-directional channels	7
Access	TDMA / TDD, FH
Channel bit rate	32 kbit/s (voice) / 25.6 kbit/s (data)
Bit rate to/from RF module	768 kbit/s
Number of carriers	75
Modulation	GFSK
Frequency band	2.400 - 2.483 GHz
Carrier spacing	1.063 385 MHz
First transmit carrier	2.401 122 GHz
Peak power	250 mW
Average power (per active channel)	10 mW
Range	30m (indoors) / 300m (outdoors)

ISM DECT Characteristics

The contents of each slot are identical to standard DECT. Carrier spacing has been defined to allocate 75 carriers in the available bandwidth.



ISM DECT Frame Structure

For ISM DECT the firmware supports frequency hopping. Carrier is changed every 2 frames which means 50 hops/sec. 75 carriers are used in the sequence, as described in the following table:

i	C <sub>i</sub>	i	C <sub>i</sub>	i	C <sub>i</sub>	i	C <sub>i</sub>	i	C <sub>i</sub>	i	C <sub>i</sub>	i	C <sub>i</sub>	i	C <sub>i</sub>
1	35	2	72	3	17	4	36	5	74	6	22	7	45	8	58
9	26	10	53	11	73	12	20	13	42	14	52	15	61	16	5
17	11	18	23	19	48	20	67	21	7	22	16	23	33	24	68
25	9	26	19	27	40	28	24	29	50	30	29	31	60	32	41
33	70	34	14	35	30	36	62	37	71	38	15	39	31	40	63
41	0	42	10	43	21	44	43	45	64	46	2	47	13	48	28
49	57	50	32	51	65	52	3	53	18	54	38	55	27	56	55
57	69	58	12	59	25	60	51	61	59	62	66	63	37	64	1
65	47	66	6	67	54	68	44	69	34	70	4	71	56	72	46
73	8	74	49	75	39										

Carrier Sequence for Frequency Hopping

The actual frequency for each carrier is the following:

Carrier	Frequency	Carrier	Frequency	Carrier	Frequency
0	2.401.122	25	2.427.707	50	2.454.292
1	2.402.186	26	2.428.770	51	2.455.355
2	2.403.249	27	2.429.834	52	2.456.418
3	2.404.313	28	2.430.897	53	2.457.482
4	2.405.376	29	2.431.961	54	2.458.545
5	2.406.439	30	2.433.024	55	2.459.609
6	2.407.503	31	2.434.087	56	2.460.672
7	2.408.566	32	2.435.151	57	2.461.735
8	2.409.630	33	2.436.214	58	2.462.799
9	2.410.693	34	2.437.278	59	2.463.862
10	2.411.756	35	2.438.341	60	2.464.926
11	2.412.820	36	2.439.404	61	2.465.989
12	2.413.883	37	2.440.468	62	2.467.052
13	2.414.946	38	2.441.531	63	2.468.116
14	2.416.010	39	2.442.594	64	2.469.179
15	2.417.073	40	2.443.658	65	2.470.242
16	2.418.137	41	2.444.721	66	2.471.306
17	2.419.200	42	2.445.785	67	2.472.369
18	2.420.263	43	2.446.848	68	2.473.433
19	2.421.327	44	2.447.911	69	2.474.496
20	2.422.390	45	2.448.975	70	2.475.559
21	2.423.454	46	2.450.038	71	2.476.623
22	2.424.517	47	2.451.102	72	2.477.686
23	2.425.580	48	2.452.165	73	2.478.750
24	2.426.644	49	2.453.228	74	2.479.813