parameter sensitivity

f		
ggg	d	
	d	

formulas

$$rxosc = \frac{8*500(1+2dwn3)}{2^{ndec}*Rb}$$

$$ncoff = \frac{Rb*2^{20}*2^{ndec}}{500*(1+2*dwn3)}$$

$$crgain = 2 + \frac{2^{16}*Rb}{fDev+rxosc}$$

Dependancies

```
•224 BW_Mod = 2 * f_Dev + Rb * ( 1 + M ) / 2   # RFM22, p45
•225 BW_Mod = 2 * f_Dev + Rb * ( 1 + M )       # more realistic + Excel sheet
 226
```

we forgot about Manchester for the moment

0x1C = f_Dev, Rb
0x20 = f_Dev, Rb
0x21 = f_Dev, Rb
0x22 = f_Dev, Rb
0x23 = f_Dev, Rb
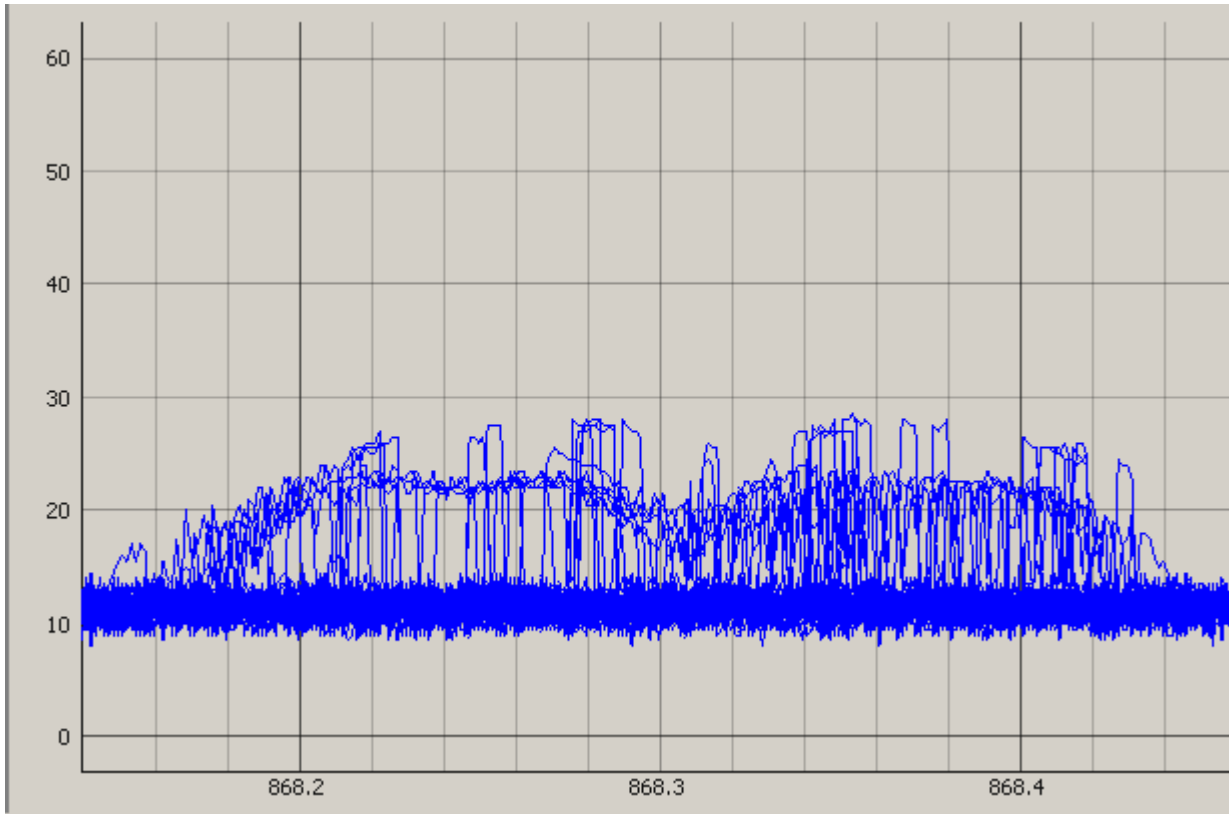0x24 = f_Dev, Rb, RbError_1%
0x25 = f_Dev, Rb

M   = 0   # Manchester (0=Off, 1=On)
Rb   = 17.24   # BitRate [kHz]
Rb   = 19.2   # BitRate [kHz]
f_Dev = 67   # Frequency Deviation [kHz]

BWmod = 151.24

halverwege hoby buro


```
 1  halverwege buro
 2    -- Excel Table 1 : ndec, d3, filset = 0, 0, B
 3    SI4432_Write ( 0x1C, 0x0B )     --/ IF Filter Bandwidth
 4    SI4432_Write ( 0x20, 0xE8 )     --/ Clock Recovery Oversampling Rate
 5    SI4432_Write ( 0x21, 0x00 )     --/ Clock Recovery Offset 2
 6    SI4432_Write ( 0x22, 0x8D )     --/ Clock Recovery Offset 1
 7    SI4432_Write ( 0x23, 0x3B )     --/ Clock Recovery Offset 0
 8    SI4432_Write ( 0x24, 0x10 )     --/ Clock Recovery Timing Loop Gain 1
 9    SI4432_Write ( 0x25, 0x4B )     --/ Clock Recovery Timing Loop Gain 0
10    ;;SI4432_Write ( 0x1F, 0x00 )
11  44
12  52 38 37 A8 00 00 00 C3 2D 93 29
13  42 70 6F 00 00 00 01 86 4B 26 2A
14  52 70 6F 50 04 00 07 0C B7 3A 29
15  52 70 6F 50 00 00 03 0C B7 B7 29
16  44
17  52 70 6F 50 00 00 03 0C B7 B7 2A
18  52 70 6F 50 00 00 03 0C B7 B7 2B
19  52 70 6F 50 00 00 03 0C B7 B7 2C
20  52 70 6F 50 00 00 03 0C B7 B7 2B
21  52 70 6F 50 00 00 03 0C B7 B7 2B
22  52 70 6F 50 00 00 03 0C B7 B7 2D
23  52 70 6F 50 00 00 03 0C B7 B7 2C
24  44
25  52 70 6F 51 00 00 03 0C 64 64 29
26  52 70 6F 51 00 00 03 0C 64 64 29
27  52 70 6F 51 00 00 03 0C 64 64 2A
28  52 70 6F 51 00 00 03 0C 64 64 2B
29  52 70 6F 51 00 00 03 0C 64 64 2C
30  52 70 6F 51 00 00 03 0C 64 64 29
31  52 70 6F 51 00 00 03 0C 64 64 2A
32  44
33  52 70 6F 51 00 00 03 0C 64 64 2B
34  52 70 6F 51 00 00 03 0C 64 64 2A
```

```
 35  52 70 6F 51 00 00 03 0C 64 64 2A
 36  52 70 6F 51 00 00 03 0C 64 64 2B
 37  44
 38  52 78 37 A8 80 00 00 C3 19 3C 2A
 39  44
 40  5A 70 77 A8 80 00 01 87 19 B2 2A
 41  52 70 6F 51 00 00 06 18 C8 94 2A
 42  44
 43  52 70 6F F2 00 00 06 18 C8 9B 2B
 44  44
 45  52 70 6F 51 00 00 03 0C 64 64 2A
 46  44
 47  52 70 6F 51 00 00 03 8C 26 1E 2A
 48  52 70 6F 51 00 00 06 18 C8 94 27
 49  44
 50  56 E0 DE A2 00 00 0C 31 90 E5 2C
 51  A4 E0 BD 44 00 00 10 C6 40 51 2D
 52  52 70 6F 51 80 00 01 86 32 ED 2D
 53  52 70 6F 51 00 00 03 0C 64 64 2B
 54  44
 55  52 70 6F 51 00 00 03 0C 64 64 2C
 56  52 70 6F 51 00 00 03 0C 64 64 2C
 57  52 70 67 00 80 00 01 86 32 59 2D
 58  52 70 6F 51 00 00 03 0C 64 64 2D
 59  52 70 6F 51 00 00 03 0C 64 64 2C
 60  44
 61  E4 E0 DE A6 00 00 0C 31 20 56 2D
 62  52 70 DE A2 00 00 0C 31 90 C3 2C
 63  52 70 6F 51 00 00 03 0C 64 64 2C
 64  52 70 6F 51 00 00 03 0C 64 64 29
 65  52 70 6F 51 00 00 03 0C 64 64 2A
 66  52 70 6F 51 00 00 03 0C 64 64 2B
 67  52 70 6F 51 00 00 03 0C 64 64 2C
 68  44
 69  52 70 6F 51 00 00 03 0C 64 64 2B
 70  44
 71  44
 72  52 70 DE A2 00 00 04 31 90 F4 2B
 73  52 70 6F 10 00 00 01 86 32 0E 29
 74  52 70 6F 51 00 00 03 0C 64 64 2A
 75  44
 76  52 70 6F 51 00 00 03 0C 64 64 2A
 77  52 70 6F 51 00 00 03 0C 64 64 2A
 78  44
 79  52 70 67 B8 80 00 01 86 3A 50 2C
 80  52 70 6F 51 00 00 03 0C 64 64 2D
 81  52 70 6F 51 00 00 03 0C 64 64 2B
 82  52 70 6F 51 00 00 03 0C 64 64 2D
 83  52 70 6F 51 00 00 03 0C 64 64 2C
 84  44
 85  52 70 6E 51 00 00 03 0C 33 33 2C
 86  52 70 6E 51 00 00 03 0C 33 33 2C
 87  52 70 6E 51 00 00 03 0C 33 33 2C
 88  52 70 6E 51 00 00 03 0C 33 33 2D
 89  52 70 6E 51 00 00 03 0C 33 33 2C
 90  52 70 6E 51 00 00 03 0C 33 33 2D
 91  44
 92  52 70 6E 51 00 00 07 18 66 37 2A
 93  44
 94  09 38 37 20 40 00 00 61 86 A4 2C
 95  69 38 3F 94 40 00 00 60 C3 AE 2D
 96  52 70 6E 51 00 00 03 0C 33 33 2C
 97  52 70 6E 51 00 00 03 0C 33 33 2C
 98  44
 99  52 70 6E 51 00 00 03 0C 33 33 28
100  52 70 6E 51 00 00 03 0C 33 33 28
101  52 70 6E 51 00 00 03 0C 33 33 2A
102  52 70 6E 51 00 00 03 0C 33 33 29
103  52 70 6E 51 00 00 03 0C 33 33 2B
104  44
105  52 70 6E 12 00 00 06 18 66 46 2B
106  B6 E0 DC A2 00 00 0C 30 98 71 29
107  52 70 6E 51 00 00 03 0C 33 33 2A
108  52 70 6E 51 00 00 03 0C 33 33 2B
109  52 70 6E 71 00 00 03 0C 33 CB 29
```

```
110  44
111  52  70  6E  51  00  00  03  0C  33  33  2C
112  52  70  6E  71  00  00  03  0C  33  CB  2C
113  52  70  6E  51  00  00  03  0C  33  33  2C
114  52  70  6E  51  00  00  03  0C  33  33  2B
115  44
116  00  38  37  28  00  00  00  C1  06  E5  2B
117  62  E0  DC  A2  00  00  0C  30  CC  93  29
118  52  70  6E  51  00  00  03  0C  33  33  2A
119  52  70  6E  51  00  00  03  0C  33  33  28
120  52  70  6E  51  00  00  03  0C  33  33  29
121  44
122  44
123  44
124  44
125  44
126  52  70  EE  51  00  00  03  08  33  1B  28
127  A4  E0  DC  C4  00  00  18  61  98  A4  28
128  44
129  44
130  44
131  44
132  44
133  44
134  62  76  C0  06  48  28  E2  C7  1E  0B  29
135  62  7A  60  03  24  14  51  21  C7  C7  28
136  44
137  60  7A  60  04  12  1C  08  90  EE  B7  28
138  44
139  62  7A  60  05  00  14  51  A1  11  4B  28
140  44
141  44
142  44
143  53  70  6E  51  00  00  02  18  76  09  27
144  44
145  72  70  6F  58  80  00  01  C6  19  95  28
146  52  70  6E  51  00  00  06  1C  27  07  29
147  29  38  37  10  40  00  00  61  86  88  2A
148  52  70  6E  51  00  00  03  0C  33  33  28
149  44
150  52  70  6E  51  00  00  03  0C  33  33  2C
151  52  70  6E  51  00  00  03  0C  33  33  29
152  52  70  6E  51  00  00  03  0C  33  33  2B
153  52  70  6E  51  00  00  03  0C  33  33  2C
154  52  70  6E  51  00  00  03  0C  33  33  2C
155  44
156  52  70  6E  51  00  00  03  0C  33  33  2C
157  52  70  6E  51  00  00  03  0C  33  33  2D
158  52  70  6E  51  00  00  03  0C  33  33  2C
159  52  70  6E  51  00  00  03  0C  33  33  2D
160  52  70  6E  51  00  00  03  0C  33  33  2C
161  52  70  6E  51  00  00  03  0C  33  33  2C
162  52  70  6E  51  00  00  03  0C  33  33  2C
163  44
164  5B  78  37  28  80  00  00  C3  0C  EC  2A
165  52  70  6E  51  00  00  03  0C  33  33  2B
166  52  70  6E  51  00  00  03  0C  33  33  29
167  44
168  5B  38  37  28  00  00  00  C1  06  21  2B
169  52  70  6E  51  00  00  03  0C  33  33  2B
170  52  70  6E  51  00  00  03  0C  33  33  2A
171  52  70  6E  51  00  00  03  0C  33  33  29
172  44
173  52  70  6E  51  00  00  03  0C  33  33  2A
174  52  70  6E  51  00  00  03  0C  33  33  2A
175  52  70  6E  51  00  00  03  0C  33  33  2C
176  44
177  52  70  6C  A2  00  00  06  18  6E  DF  2A
178  52  70  6E  51  00  00  03  0C  33  33  2B
179  44
180  52  70  6E  51  00  00  03  0C  33  33  2A
181  52  70  6E  51  00  00  43  0C  33  BA  2A
182  52  70  6E  51  00  00  03  0C  33  33  2C
183  52  70  6E  51  00  00  03  0C  33  33  29
184  52  70  6E  51  00  00  03  0C  33  33  29
```

```
185  52 70 6E 51 00 00 03 0C 33 33 2A
186  44
187  52 70 67 28 80 00 01 C3 0C 57 2A
188  52 30 6E 41 80 00 01 86 19 98 2B
189  52 70 6E 51 00 00 01 06 19 31 2B
190  52 70 6E 51 00 00 01 86 19 4B 2A
191  44
192  44
193  52 70 6E 52 00 00 06 18 EE 87 31
194  52 70 6E 52 00 00 03 0C 77 77 2B
195  52 70 6E 52 00 00 03 0C 77 77 2A
196  52 70 6E 52 00 00 03 0C 77 77 2B
197  52 70 6E 52 00 00 03 0C 77 77 2C
198  52 70 6E 52 00 00 03 0C 77 77 2C
199  52 70 6E 52 00 00 03 0C 77 77 2C
200
201  44
202  52 70 6E 52 00 00 03 0C 77 77 2B
203  52 70 6E 52 00 00 03 0C 77 77 2B
204  52 70 6E 52 00 00 03 0C 77 77 2A
205  52 70 6E 52 00 00 03 0C 77 77 2A
206  52 70 6E 52 00 00 03 0C 77 77 2B
207  52 70 6E 52 00 00 03 0C 77 77 2B
208  44
209  52 70 6E 52 00 00 03 0C 77 77 2A
210  52 70 7E 43 00 00 01 86 3B 25 2A
211  52 70 6E 40 00 00 01 86 3B E4 2A
212  44
213  52 70 6E 52 00 00 03 0C 77 77 2A
214  52 70 6E 52 00 00 03 0C 77 77 2C
215  52 70 6E 52 00 00 03 0C 77 77 2A
216  52 70 6E 52 00 00 03 0C 77 77 2B
217  52 70 6E 52 00 00 03 0C 77 77 2C
218  52 70 6E 52 00 00 03 0C 77 77 2B
219  52 70 6E 52 00 00 03 0C 77 77 2B
220  44
221  24 E0 DC 80 00 00 0C 23 B8 0A 2B
222  52 78 77 29 00 00 00 C3 1D DB 2A
223  52 70 6E 52 00 00 03 0C 77 77 2B
224  72 E0 DC A4 00 00 0C 31 DC 7E 2C
225  52 70 6E 52 00 00 03 0C 77 77 2A
226  52 70 6E 52 00 00 03 0C 77 77 2A
227  44
228  52 70 6E 52 00 00 01 86 3B 0F 2D
229  24 E0 DC A4 00 00 0C 31 B8 CC 2D
230  52 70 6E 52 00 00 03 0C 77 77 2E
231  52 70 6E 52 00 00 03 0C 77 77 2D
232  52 70 6E 52 00 00 03 0C 77 77 2D
233  52 70 6E 52 00 00 03 0C 77 77 2D
234  52 70 6E 52 00 00 03 0C 77 77 2D
235  44
236  53 78 37 29 00 00 00 C3 1C E4 2C
237  52 70 6E 52 00 00 06 08 EE C4 2D
238  44
239  59 38 37 29 00 00 00 C1 8E 60 2B
240  44
241  52 70 6E 52 00 00 03 0C 77 77 2A
242  52 70 6E 52 00 00 03 0C 77 77 2A
243  52 70 6E 52 00 00 03 0C 77 77 29
244  52 70 6E 52 00 00 03 0C 77 77 28
245  52 F0 6E 52 00 00 03 0C 77 CB 2A
246  52 70 6E 52 00 00 03 0C 77 77 29
```

```
 1    -- from python + Excel Table 2 (very GOOD)
 2    SI4432_Write ( 0x1C, 0x95 )    --/ IF Filter Bandwidth
 3    SI4432_Write ( 0x20, 0x5C )    --/ Clock Recovery Oversampling Rate
 4    SI4432_Write ( 0x21, 0x20 )    --/ Clock Recovery Offset 2
 5    SI4432_Write ( 0x22, 0x5E )    --/ Clock Recovery Offset 1
 6    SI4432_Write ( 0x23, 0x27 )    --/ Clock Recovery Offset 0
 7    SI4432_Write ( 0x24, 0x10 )    --/ Clock Recovery Timing Loop Gain 1
 8    SI4432_Write ( 0x25, 0x32 )    --/ Clock Recovery Timing Loop Gain 0
 9   ;;SI4432_Write ( 0x1F, 0x00 )
10  45
11  50 60 DA A2 00 00 0C 33 28 D1 20
```

```
12  52 71 6D 51 00 00 83 0C CE 00 1F
13  50 70 7A A2 00 00 0E 33 28 50 1E
14  44
15  12 70 6D 41 00 00 01 86 E5 AF 1F
16  52 70 6D 51 00 00 03 0C CA CA 1E
17  52 70 6D 51 00 00 03 0C CA CA 1E
18  52 70 6D 51 00 00 03 0D CA FB 1F
19  44
20  44
21  44
22  44
23  44
24  44
25  44
26  44
27  44
28  44
29  60 7A 61 0E 00 28 A2 82 CC B2 1F
30  44
31  44
32  62 7A 61 06 37 14 11 A1 63 0B 1E
33  44
34  52 70 6D 51 00 00 03 0C CA CA 1F
35  44
36  52 70 6D 51 00 00 03 1C 8A 89 1E
37  52 70 7D F9 80 00 01 86 65 B3 1E
38  56 E0 DB A0 00 00 0C 36 10 DF 1E
39  44
40  52 70 6D 51 00 00 03 0C CA CA 1E
41  52 70 6D 51 00 00 03 04 CA 73 1D
42  44
43  52 70 65 41 00 00 03 0C 94 6C 1D
44  52 70 4D 51 00 00 02 0C D0 05 1F
45  50 F0 6D 51 00 00 03 0C CA E4 1C
46  52 70 6D 51 00 00 03 0C CA CA 1E
47  52 70 6D 51 00 00 03 0C CA CA 1C
```

```
 1     -- Excel Table 3 : ndec, d3, filset = 2, 1, E
 2   SI4432_Write ( 0x1C, 0xAE )     --/ IF Filter Bandwidth
 3   SI4432_Write ( 0x20, 0xAE )     --/ Clock Recovery Oversampling Rate
 4   SI4432_Write ( 0x21, 0x00 )     --/ Clock Recovery Offset 2
 5   SI4432_Write ( 0x22, 0xBC )     --/ Clock Recovery Offset 1
 6   SI4432_Write ( 0x23, 0x4F )     --/ Clock Recovery Offset 0
 7   SI4432_Write ( 0x24, 0x10 )     --/ Clock Recovery Timing Loop Gain 1
 8   SI4432_Write ( 0x25, 0x63 )     --/ Clock Recovery Timing Loop Gain 0
 9  45
10  52 70 26 51 00 00 03 0C 33 9F 27
11  53 70 6F 51 00 00 03 0C 33 2D 22
12  52 70 6E 59 00 08 03 0C 33 5F 21
13  52 70 6E 51 00 00 03 0C 33 33 22
14  44
15  44
16  44
17  44
18  44
19  44
20  44
21  44
22  44
23  44
24  44
25  44
26  52 70 EE 51 00 00 03 0C 33 DF 29
27  52 70 6E 51 00 00 03 0C 73 33 22
28  44
29  44
30  52 70 6E 51 00 00 03 0C 33 33 23
31  52 70 6E 51 00 00 03 0C 33 33 21
32  44
33  44
34  52 70 6D 51 00 00 03 0C CA CA
35  24
36  44
```

```
37 44
38 10 38 37 28 80 00 00 C3 0C 22 25
39 56 F0 DC A2 00 00 06 38 4C A2 25
40 52 70 6E 51 00 00 03 0C 33 33 23
41 44
42 09 38 33 54 40 00 00 30 CC DC 25
43 52 70 7F 33 00 00 06 19 94 8E 25
44 52 70 6D 51 00 00 03 0C CA CA 25
45 52 70 6D 51 00 00 03 0C CA CA 24
46 44
47 52 70 6D 51 00 00 03 0C CA CA 25
48 52 70 6D 51 00 00 03 0C CA CA 26
49 52 70 6D 51 00 00 03 0C CA CA 25
50 44
51 52 70 6D 51 00 00 03 0C CA CA 25
52 52 70 7D 51 00 00 02 0C CA BB 25
53 52 70 6D 51 00 00 03 0C CA CA 25
54 52 70 6D 51 00 00 03 0C CA CA 24
55 52 E0 DA A2 00 00 0C 33 28 FF 26
56 44
57 44
58 44
```

buro bir, 8 cm antenna
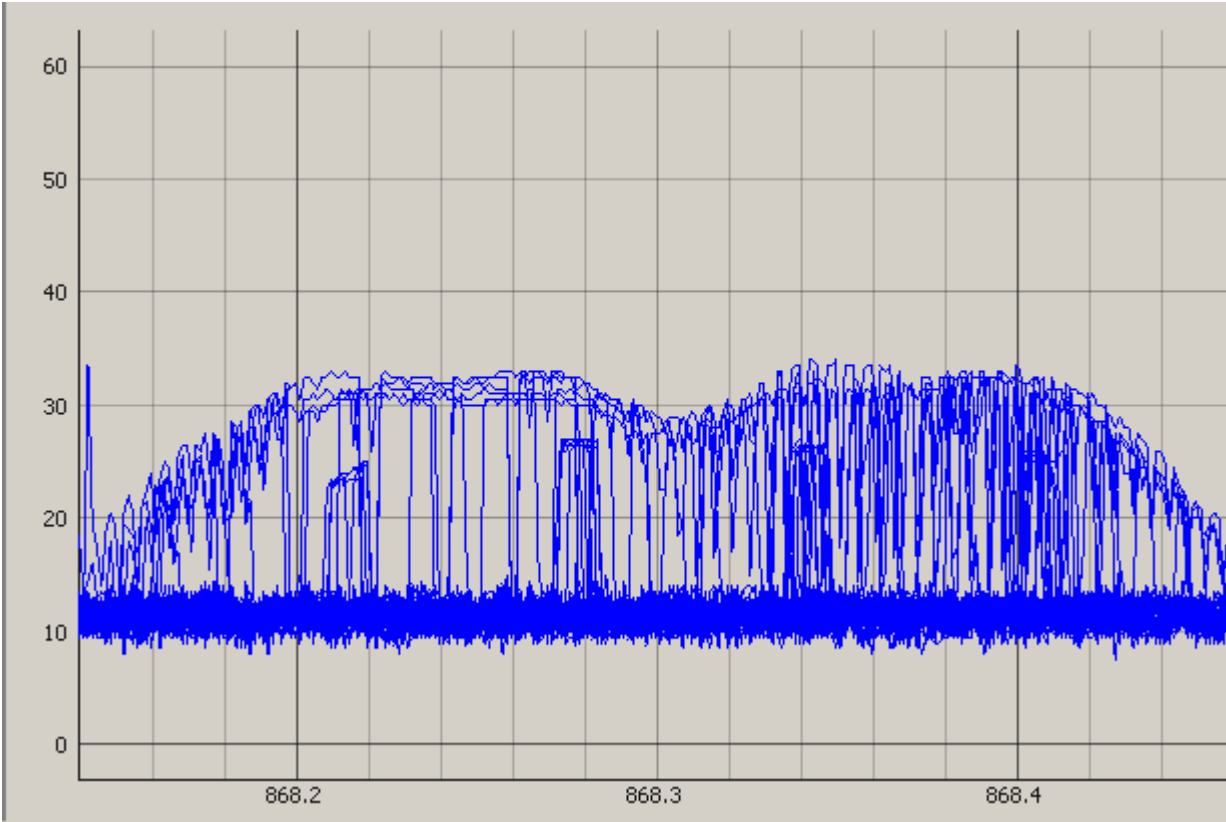
Filter Tables

868.33 MHz Carrier
67 kHz Deviation
17.24 kB
AFC enables

```
1              ndec    d3    filset
2  Table 0        1      1       5
3  Table 1        0      0       B
4  Table 2        1      1       5
5  Table 3        2      1       E
```

```
 1  Modulation BW = 151.24 [kHz]
 2  0x1c = 0x95
 3  0x20 = 0x5c
 4  0x21 = 0x20
 5  0x22 = 0x5e
 6  0x23 = 0x27
 7  0x24 = 0x10
 8  0x25 = 0x32
 9  0x1d = 0x40
10  0x1e = 0xa
11  0x1f = 0x0
12  0x2a = 0x30
13  0x69 = 0x60
14  ==========================
15
```

Table 0, AN440 + RFM22 (Ndec, D3, filset = 1, 1, 5)

```
 1     -- from python VEEL SLECHTER
 2     SI4432_Write ( 0x1C, 0x95 )      --/ IF Filter Bandwidth
 3     SI4432_Write ( 0x20, 0x5C )      --/ Clock Recovery Oversampling Rate
 4     SI4432_Write ( 0x21, 0x20 )      --/ Clock Recovery Offset 2
 5     SI4432_Write ( 0x22, 0x5E )      --/ Clock Recovery Offset 1
 6     SI4432_Write ( 0x23, 0x27 )      --/ Clock Recovery Offset 0
 7     SI4432_Write ( 0x24, 0x10 )      --/ Clock Recovery Timing Loop Gain 1
 8     SI4432_Write ( 0x25, 0x32 )      --/ Clock Recovery Timing Loop Gain 0
 9
10     44
11  52 70 75 4D 00 00 03 0C C8 C8 33
12  52 70 75 4D 00 00 03 0C C8 C8 33
13  52 70 75 4D 00 00 03 0C C8 C8 33
14  52 70 75 4D 00 00 03 0C C8 C8 33
15  52 70 75 4D 00 00 03 0C C8 C8 32
16  52 70 75 4D 00 00 03 0C C8 C8 33
17  52 70 75 4D 00 00 03 0C C8 C8 33
18  44
19  52 70 75 4D 00 00 03 0C C8 C8 34
20  52 70 75 4D 00 00 03 0C C8 C8 34
21  52 70 75 4D 00 00 03 0C C8 C8 34
22  52 70 75 4D 00 00 03 0C C8 C8 34
23  52 70 75 4D 00 00 03 0C C8 C8 34
24  52 70 75 4D 00 00 03 0C C8 C8 35
25  52 70 75 4D 00 00 03 0C C8 C8 34
26  44
27  52 70 75 4D 00 00 03 0C C8 C8 34
28  52 70 75 4D 00 00 03 0C C8 C8 34
29  52 70 75 4D 00 00 03 0C C8 C8 35
30  52 70 75 4D 00 00 03 0C C8 C8 34
31  52 70 75 4D 00 00 03 0C C8 C8 35
32  52 70 75 4D 00 00 03 0C C8 C8 34
33  44
34  52 70 75 4D 00 00 03 0C C8 C8 33
35  52 70 75 4D 00 00 03 0C C8 C8 33
36  52 70 75 4D 00 00 03 0C C8 C8 33
37  52 70 75 4D 00 00 03 0C C8 C8 34
38  52 70 75 4D 00 00 03 0C C8 C8 34
39  52 70 75 4D 00 00 03 0C C8 C8 33
40  52 70 75 4D 00 00 03 0C C8 C8 34
41  44
```

Excel sheet Table 2 (Ndec, D3, filset = 2, 1, E)
Python berekening klopt

```
 1    -- 17.24 kB  werkt maar niet goed
 2    SI4432_Write ( 0x1C, 0xAE )    --/ IF Filter Bandwidth
 3    SI4432_Write ( 0x20, 0xAE )     --/ Clock Recovery Oversampling Rate
 4    SI4432_Write ( 0x21, 0x00 )     --/ Clock Recovery Offset 2
 5    SI4432_Write ( 0x22, 0xBC )     --/ Clock Recovery Offset 1
 6    SI4432_Write ( 0x23, 0x4F )     --/ Clock Recovery Offset 0
 7    SI4432_Write ( 0x24, 0x10 )     --/ Clock Recovery Timing Loop Gain 1
 8    SI4432_Write ( 0x25, 0x63 )     --/ Clock Recovery Timing Loop Gain 0
 9
10    44
11  52 70 75 4D 00 00 03 0C C8 C8 38
12  52 70 75 4D 00 00 03 0C C8 C8 38
13  52 70 75 4D 00 00 03 0C C8 C8 38
14  52 70 75 4D 00 00 03 0C C8 C8 38
15  52 70 75 4D 00 00 03 0C C8 C8 38
16  52 70 75 4D 00 00 03 0C C8 C8 38
17  44
18  52 70 75 4D 00 00 03 0C C8 C8 38
19  52 70 75 4D 00 00 03 0C C8 C8 38
20  52 70 75 4D 00 00 03 0C C8 C8 38
21  52 70 75 4D 00 00 03 0C C8 C8 38
22  52 70 75 4D 00 00 03 0C C8 C8 38
23  44
```

Carrier Frequency

for the moment 868.33 MHz seems to be the optimum

```
 1  # from the Excel sheet:
 2  #    868.31 MHz Carrier
 3  #    67    kHz Deviation
 4  #    17.24  kB
 5  #    AFC enabled
 6  #    RB Error > 1%
 7    -- 17.24 kB  werkt maar niet goed
 8    SI4432_Write ( 0x1C, 0xAE )    --/ IF Filter Bandwidth
 9    SI4432_Write ( 0x20, 0xAE )     --/ Clock Recovery Oversampling Rate
10    SI4432_Write ( 0x21, 0x00 )     --/ Clock Recovery Offset 2
11    SI4432_Write ( 0x22, 0xBC )     --/ Clock Recovery Offset 1
12    SI4432_Write ( 0x23, 0x4F )     --/ Clock Recovery Offset 0
13    SI4432_Write ( 0x24, 0x10 )     --/ Clock Recovery Timing Loop Gain 1
14    SI4432_Write ( 0x25, 0x63 )     --/ Clock Recovery Timing Loop Gain 0
15
16    SI4432_Write ( 0x75, 0x73 )     --/ Frequency Band Select
17    SI4432_Write ( 0x76, 0x67 )     --/ Nominal Carrier Frequency
18    ;SI4432_Write ( 0x77, 0xC0 )     --/ Nominal Carrier Frequency   868.3
19    SI4432_Write ( 0x77, 0xE0 )     --/ Nominal Carrier Frequency   868.31
20
21
22  44
23  52 70 80 47 00 00 03 0C 7F 7F 34
24  52 70 80 47 00 00 03 0C 7F 7F 35
25  52 70 80 47 00 00 03 0C 7F 7F 33
26  52 70 80 47 00 00 03 0C 7F 7F 33
27  44
28  52 70 80 47 00 00 03 0C 7F 7F 36
29  52 70 80 47 00 00 03 0C 7F 7F 35
30  52 70 80 47 00 00 03 0C 7F 7F 35
31  52 70 80 47 00 00 03 0C 7F 7F 35
32  52 70 80 47 00 00 03 0C 7F 7F 35
33  44
34  52 70 7F 47 00 00 01 86 0A 6D 35      <<< CRC Error
35  52 70 7F 47 00 00 03 0C 1C 15 36      <<< CRC Error
36  52 70 7F 47 00 00 03 0C 15 15 35
```

```
37  52 70 7F 47 00 00 03 0C 15 15 35
38  44
39  52 70 7F 48 00 00 01 86 38 08 36        <<< CRC Error
40  52 70 7F 48 00 00 03 0C 70 70 35
41  52 70 7F 48 00 00 03 0C 70 70 34
42  52 70 7F 48 00 00 03 0C 70 70 35
43  52 70 7F 48 00 00 03 0C 70 70 34
44  52 70 7F 48 00 00 03 0C 70 70 34
45  44
46  52 70 7E 48 00 00 03 0C 27 27 35
47  52 70 7E 48 00 00 03 0C 27 27 35
48  52 70 7E 48 00 00 03 0C 27 27 35
49  52 70 7E 48 00 00 03 0C 27 27 34
50  52 70 7E 48 00 00 03 0C 27 27 34
51  52 70 7E 48 00 00 03 0C 27 27 35
```

868.30 is worse

```
 1  FF 06 AA BB CC
 2  45
 3  44
 4  44
 5  44
 6  44
 7  52 70 79 4A 00 00 03 0C 24 24 35
 8  44
 9  44
10  52 70 79 4B 00 00 03 0C F7 F7 36
11  44
12  44
13  52 70 79 4B 00 00 03 0C F7 F7 37
14  44
15  44
16  09 38 3C 02 C0 00 00 61 94 19 38
17  44
18  44
19
```

868.32 is ok

```
 1  44
 2  52 70 78 4C 00 00 03 0C FB FB 30
 3  52 70 78 4C 00 00 03 0C FB FB 2E
 4  52 70 78 4C 00 00 06 19 F6 3A 2E
 5  52 70 78 4C 00 00 03 0C FB FB 2E
 6  52 70 78 4C 00 00 03 0C FB FB 2F
 7  52 78 3C 26 00 00 00 C3 3E EB 2F
 8  44
 9  52 70 78 4B 00 00 03 0C A0 A0 2F
10  52 70 78 4B 00 00 03 0C A0 A0 2E
11  52 70 78 4B 00 00 03 0C A0 A0 2F
12  52 70 78 4B 00 00 03 0C A0 A0 2F
13  52 70 78 4B 00 00 03 0C A0 A0 2F
14  52 70 78 4B 00 00 03 0C A0 A0 2E
15  52 70 78 4B 00 00 03 0C A0 A0 2F
16  44
17  52 70 78 4B 00 00 03 0C A0 A0 30
18  52 70 78 4B 00 00 03 0C A0 A0 2F
19  52 70 78 4B 00 00 03 0C A0 A0 30
20  52 70 78 4B 00 00 03 0C A0 A0 30
21  52 70 78 4B 00 00 06 19 40 61 2F
22  52 70 78 4B 00 00 03 0C A0 A0 30
23  44
```

868.33 is ok

```
 1  44
 2  52 70 78 4C 00 00 03 0C FB FB 30
 3  52 70 78 4C 00 00 03 0C FB FB 2E
 4  52 70 78 4C 00 00 03 0C FB FB 30
 5  52 70 78 4C 00 00 03 0C FB FB 2F
```

```
 6  52 70 78 4C 00 00 03 0C FB FB 30
 7  52 70 78 4C 00 00 03 0C FB FB 30
 8  52 70 78 4C 00 00 03 0C FB FB 30
 9  44
10  52 70 78 4C 00 00 03 0C FB FB 30
11  52 70 78 4C 00 00 03 0C FB FB 30
12  52 70 78 4C 00 00 03 0C FB FB 2F
13  52 70 78 4C 00 00 03 0C FB FB 30
14  44
```

868.34

```
 1  44
 2  52 70 77 4C 00 00 03 0C B5 B5 35
 3  52 70 77 4C 00 00 06 19 6A 74 35
 4  52 70 77 4C 00 00 03 0C B5 B5 35
 5  52 70 77 4C 00 00 03 0C B5 B5 35
 6  44
 7  52 70 77 4C 00 00 03 0C B5 B5 36
 8  52 70 77 4C 00 00 03 0C B5 B5 36
 9  52 70 77 4C 00 00 03 0C B5 B5 35
10  52 70 77 4C 00 00 03 0C B5 B5 35
11  52 70 77 4C 00 00 03 0C B5 B5 35
12  52 70 77 4C 00 00 03 0C B5 B5 36
13  44
14  52 70 77 4C 00 00 03 0C B5 B5 36
15  52 70 77 4C 00 00 03 0C B5 B5 35
16  52 70 77 4C 00 00 03 0C B5 B5 35
17  52 70 77 4C 00 00 03 0C B5 B5 35
18  44
```

868.35

```
 1  44
 2  44
 3  52 70 77 4B 00 00 03 0C EE EE 33
 4  52 70 77 4B 00 00 03 0C EE EE 31
 5  52 70 77 4B 00 00 03 0C EE EE 31
 6  52 70 77 4B 00 00 01 86 77 96 30
 7  52 70 77 4B 00 00 03 0C EE EE 31
 8  44
 9  52 70 77 4B 00 00 03 0C EE EE 32
10  44
11  44
12  52 70 77 4B 00 00 03 0C EE EE 33
13  52 70 77 4B 00 00 03 0C EE EE 33
14  52 70 77 4B 00 00 03 0C EE EE 34
15  52 70 77 4B 00 00 03 0C EE EE 32
16  52 70 77 4B 00 00 03 0C EE EE 32
17  52 70 77 4B 00 00 03 0C EE EE 33
18  44
```