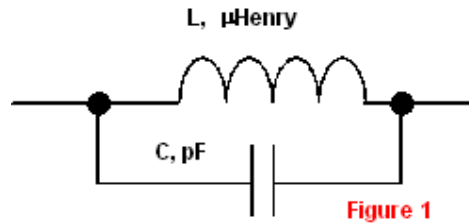


Lightning Tank Calculator

Very often an amateur need calculate parameters of resonator tank (see **Figure 1**). Certainly, there are lots programs that can do the calculations. However very quick and with acceptable tolerance amateur can do it using **Table 1**. The table gives value for L (in μHn) multiple to C (in pF).



Example 1: You need resonator tank for 10 MHz. Value LxC is 253.3.

So, you may use, $L = 2.53 \mu\text{Hn}$ and $C = 100 \text{ pF}$. $2.53 \times 100 = 253$.

Or, you may use $L = 5 \mu\text{Hn}$ and $C = 56.6 \text{ pF}$. $5 \times 56.6 = 253$.

Subtract from the capacitance 10- 15 pF- it is selfcapacitance L plus capacitance parts to ground. So, real C should be 238 pF(253- 15) or 41 pF (56- 15).

Example 2: You need resonator tank for 14 MHz. Value LxC is 129.2.

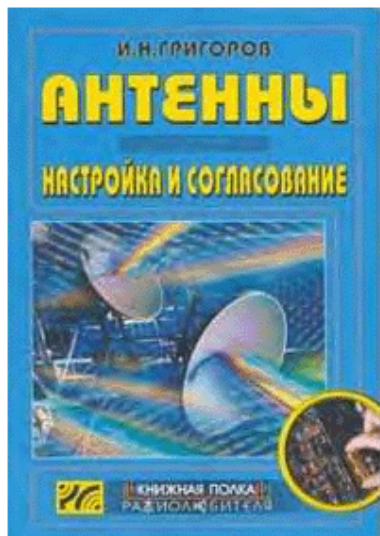
So, you may use, $L = 1.0 \mu\text{Hn}$ and $C = 129 \text{ pF}$. $1.0 \times 129 = 129$.

Or, you may use $L = 2 \mu\text{Hn}$ and $C = 64.6 \text{ pF}$. $2 \times 64.6 = 129.2$.

Subtract from the capacitance 10- 15 pF- it is selfcapacitance L plus capacitance parts to ground. So, real C should be 114 pF(129-15) or 49 pF (64- 15).

Table 1 LC Value

F, MHz	LC	F, MHz	LC	F, MHz	LC	F, MHz	LC	F, MHz	LC
0.5	101320	1.8	7818	6	703.6	15	112.6	24	43.98
0.6	70361	2.0	6333	7	516.9	16	98.95	25	40.53
0.7	51694	2.5	4053	8	395.8	17	87.65	26	37.47
0.8	39578	3.0	2814	9	312.7	18	78.18	27	34.75
0.9	31272	3.5	2068	10	253.3	19	70.17	28	32.31
1.0	25330	4.0	1583	11	209.3	20	63.33	29	30.12
1.2	17590	4.5	1251	12	175.9	21	57.44	30	28.14
1.4	12923	5.0	1013	13	149.9	22	52.33	31	26.36
1.6	9695	5.5	837.4	14	129.2	23	47.88	32	24.74



Credit Line:

Igor Grigorov.
Antenny. Nastroyka I Soglasovanie.
(In Russian)

Publishing House RadioSoft,

Moscow, 2002