

Turns ratios vs Z ratios

**Binocular core turns ratios vs. impedance ratio**

**For BN-73-202 (Fair-Rite 2873000202) cores**

Revision 2; © W0BTU 10/2/13 [http://www.w0btu.com/Beverage\\_antennas.html](http://www.w0btu.com/Beverage_antennas.html)

Balanced (twisted-pair) windings require even # of turns

*Only 1 turn requires stacked cores; 1 to 4 turns max for low-Z primary*

Reciprocal	Turns			Secondary Z	
	Pri	Sec	Z Ratio	50	75 Ohms pri.
	1	1	1.00 :1	50	75
.25	1	2	4.00 :1	200	300
.11	1	3	9.00 :1	450	675
.06	1	4	16.00 :1	800	1200
.04	1	5	25.00 :1	1250	1875
.44	2	3	2.25 :1	113	169
.25	2	4	4.00 :1	200	300
.16	2	5	6.25 :1	313	469
.11	2	6	9.00 :1	450	675
.08	2	7	12.25 :1	613	919
.06	2	8	16.00 :1	800	1200
.05	2	9	20.25 :1	1013	1519
.56	3	4	1.78 :1	89	133
.36	3	5	2.78 :1	139	208
.25	3	6	4.00 :1	200	300
.18	3	7	5.44 :1	272	408
.14	3	8	7.11 :1	356	533
.11	3	9	9.00 :1	450	675
.09	3	10	11.11 :1	556	833
.07	3	11	13.44 :1	672	1008
.06	3	12	16.00 :1	800	1200
.64	4	5	1.56 :1	78	117
.44	4	6	2.25 :1	113	169
.33	4	7	3.06 :1	153	230
.25	4	8	4.00 :1	200	300
.20	4	9	5.06 :1	253	380
.16	4	10	6.25 :1	313	469
.13	4	11	7.56 :1	378	567
.11	4	12	9.00 :1	450	675
.09	4	13	10.56 :1	528	792
.08	4	14	12.25 :1	613	919

**P. 7-69 LBDX (5th ed.): max 4 T on low-Z (coax) winding**

.69	5	6	1.44 :1	72	108
.51	5	7	1.96 :1	98	147
.39	5	8	2.56 :1	128	192
.31	5	9	3.24 :1	162	243

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.25	5	10	4.00 :1	200	300
.21	5	11	4.84 :1	242	363
.17	5	12	5.76 :1	288	432
.15	5	13	6.76 :1	338	507
.13	5	14	7.84 :1	392	588
.73	6	7	1.36 :1	68	102
.56	6	8	1.78 :1	89	133
.44	6	9	2.25 :1	113	169
.36	6	10	2.78 :1	139	208
.30	6	11	3.36 :1	168	252
.25	6	12	4.00 :1	200	300
.21	6	13	4.69 :1	235	352
.18	6	14	5.44 :1	272	408
.77	7	8	1.31 :1	65	98
.60	7	9	1.65 :1	83	124
.49	7	10	2.04 :1	102	153
.40	7	11	2.47 :1	123	185
.34	7	12	2.94 :1	147	220
.29	7	13	3.45 :1	172	259
.25	7	14	4.00 :1	200	300
.79	8	9	1.27 :1	63	95
.64	8	10	1.56 :1	78	117
.53	8	11	1.89 :1	95	142
.44	8	12	2.25 :1	113	169
.38	8	13	2.64 :1	132	198
.33	8	14	3.06 :1	153	230

For other ratios: Z ratio = square of turns ratio