

Tuning check list rev.3

all parameters known about Sergei's device collected in one place

Push pull

18.1 KHz (90.8/5, 90.8Khz is sub harmonic of 900K and 4.6Mhz)
duty cycle 25-40%
core close to saturation, primary inductance 110uH
2x 8-10/ 25/ 3-5 turns
primary ends on gaps (=spread across all length of half core)
LC resonance 90.8Khz, 200-300v on inductor
power consumption: 24v 3a idle, drops to 1a with Tesla on and under load

Gradient coil

47m 180uH
inductor 12m 90uH
 $\frac{1}{2}$ wave resonance 900K (amp. increase with interference, no freq. change)
wave resonance 4.6M
resonance on 18.1KHz $C_{lc}=0.03\mu F$ $C_{gc}=0.35\mu F$
current approx. 20-30 degree ahead of LC current

Tesla coil

12cm width 0.75mm wire approx. 25m (tuned to max. output)
4-5 pulses into sine top
tune supply voltage (50-200v) to have max. radiant effect
white sparks, DC on metal surfaces
voltage on antenna 90 degree to TC secondary
power consumption: 12v 1a (incl. step up DC DC)

optional

resonance in inductor if needed
inductor diameter 1.62 of HV coil
inductor inductance = $N \times$ inductance of 1 turn of HV coil ($N=1,2,3\dots$)
length of inductor = $1/N$ of HV coil

Ground

1-4m rod
approx. 17-20m length (tune to max. output, approx. half of Tesla HV coil)
wire 6 sq.mm min