Tesla Coil, 2-18-13

by Calvin Campbell

Problem Definition

- Things that we use need power. Since there is no good method for transmitting power wirelessly, we have to bring all the energy that we need with us. For example, electric car needs batteries or airplanes need fuel.
- Scope: This could help everyone.
- Schedule:

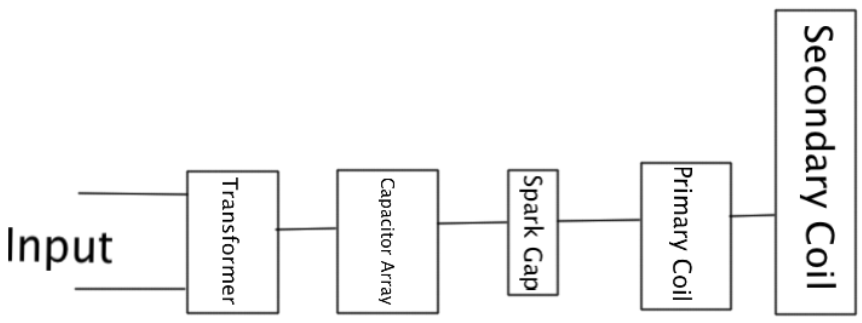
  -Research and calculations by 11/25/12

  -Build prototype by 1/1/13
- Resources:

  -"The Tesla Coil Book" by Brent Turner

Solution Specifications

- Block Diagram



- Operation Description

  When every thing is built and tuned properly, the tesla coil should produce 2-3 foot arc at the top of the secondary coil.
- Component Used:

  -2 540VA Neon Sign Transformers

  -16 0.0022uF @16kV each

  -6 Turns of 0 AWG wire

  -1160 Turns of 24 AWG wire

  -On/Off Switch

Competitive Analysis

- There is a couple different way to control the tuning of a tesla coil but they all attain the same effect.

Potential Applications

- The possibility of wirelessly transmitting electricity are endless. There would be no more need for energy storage. Anything that uses electricity or could use electricity would change dramatically.

Future Improvement Ideas

- Since the Electromagnetic spectrum is full, It seems feasible to receive energy instead of transmit it. If you tune the tesla coil to transmit a certain frequency, then it makes sense that you can reverse the process and receive that frequency.