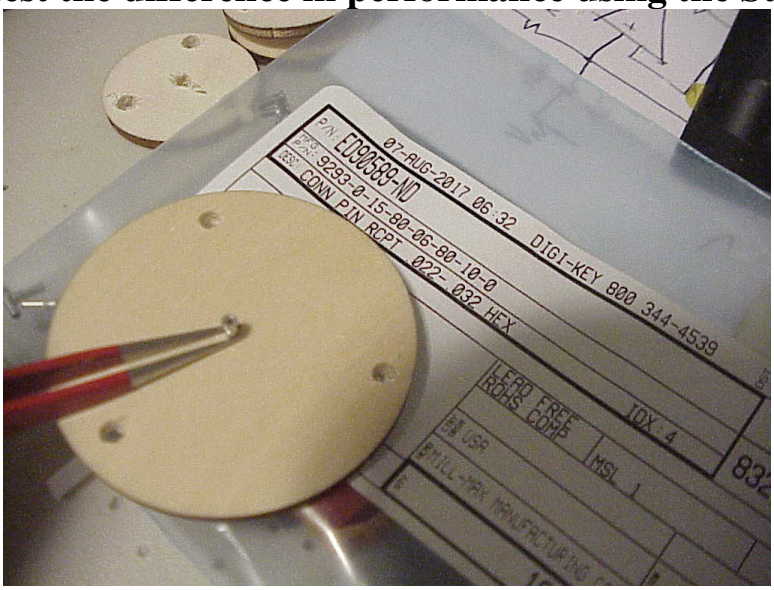
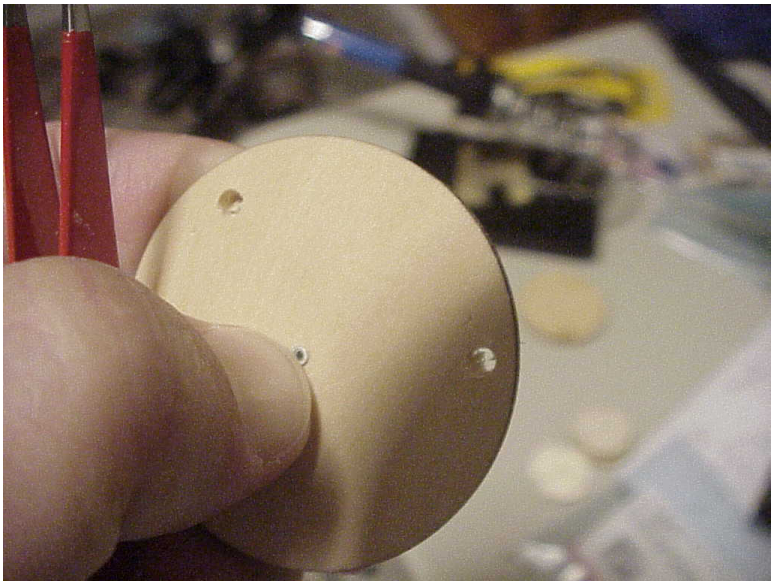
This Application Note provides guidance to build and test two different height scatterons, and test the difference in performance using the Starter Kit.

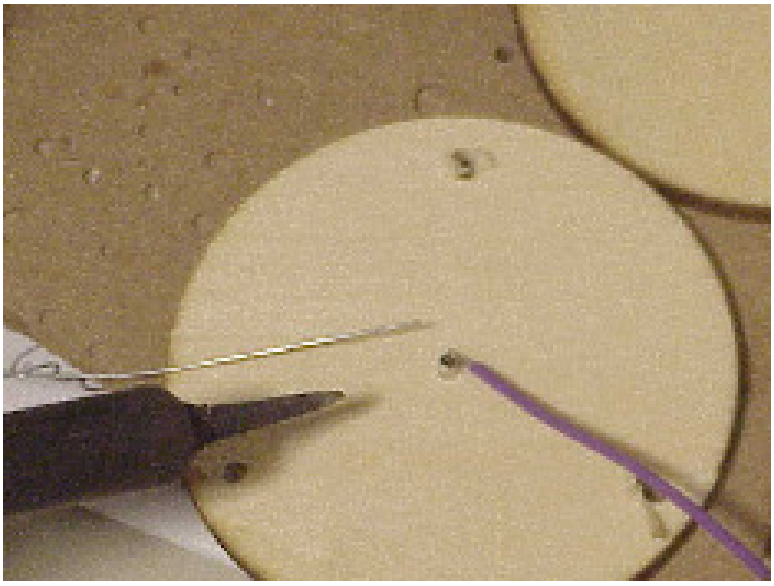


1. Drill 7/64-inch holes in 120deg increments on perimeter of 50mm lower wooden disc (3 places).
2. Drill 0.060” hole into center of 50mm lower wooden disc with 0.060” diameter bit.
3. Install connector pin into the center of the 50mm lower wooden disc.

Note: plastic discs are undesirable because of the higher dielectric constant of around 2 (low density wood use here has a dielectric constant near 1).



4. Press connector pin flush into the backside (the flatter side) of 50mm lower wooden disc.

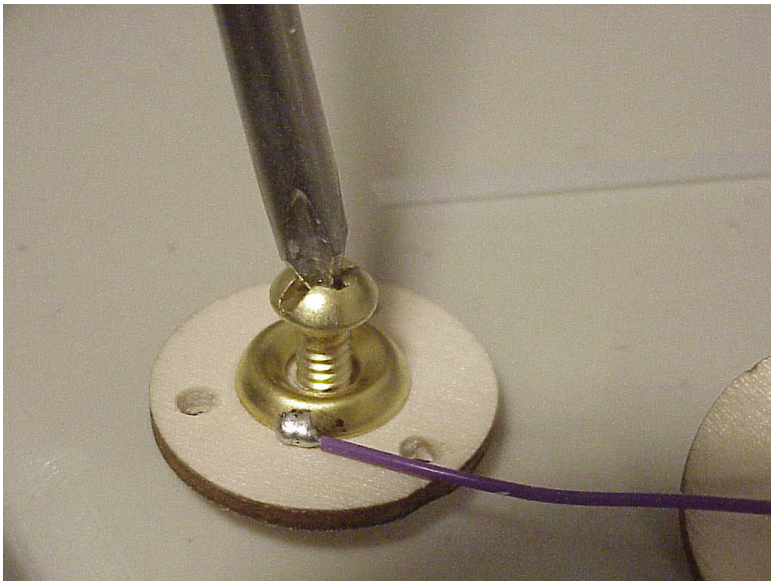


5. Solder a connecting wire to outer surface of connector pressed into the 50mm wooden disc (DO NOT SOLDER INSIDE THE CONNECTOR OR IT WILL BECOME PLUGGED AND NON-FUNCTIONAL).

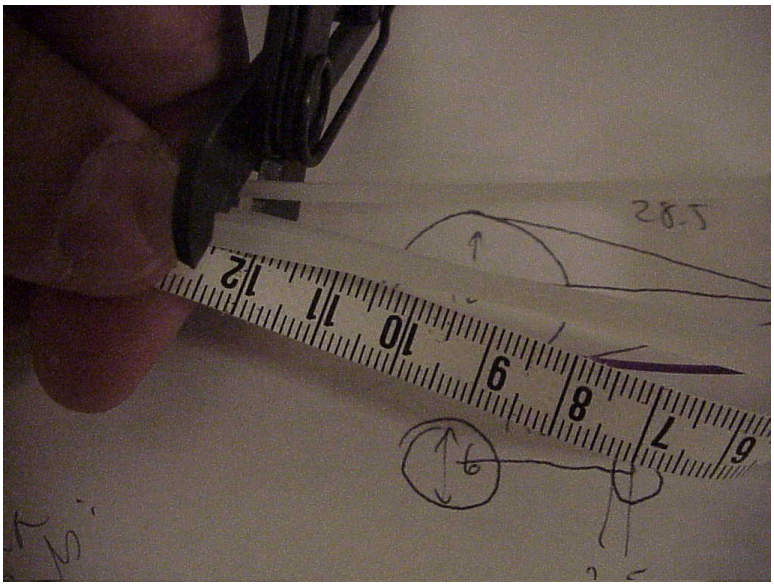
6. Drill 7/16-inch hole in 120deg increments on perimeter of 1-inch wooden disc (4 places). Drill center hole of upper 30mm wooden disc to slightly larger 1/8 inch.

7. Enlarge the 1/8 inch center hole of 30mm upper wooden disc (drilled in step 6 above) with #10-24 x ½ inch coarse thread brass screw.

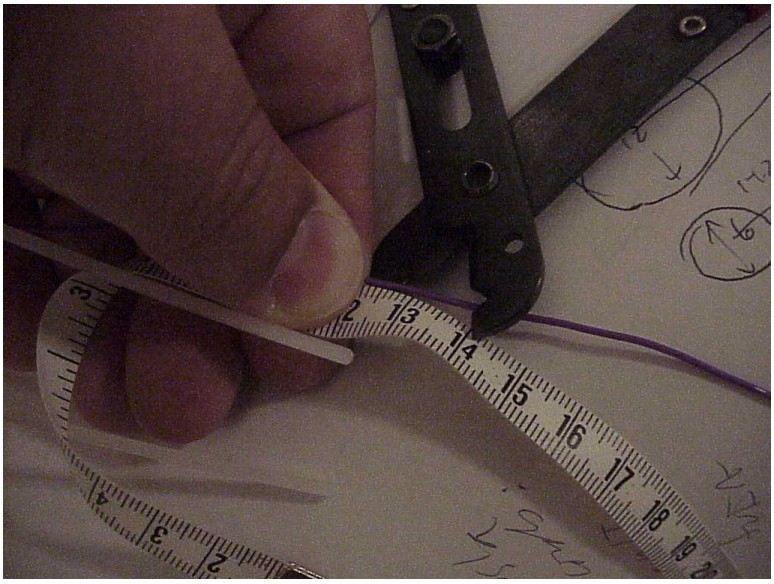
8. Solder connecting wire to outer edge of brass #10 finishing washer.



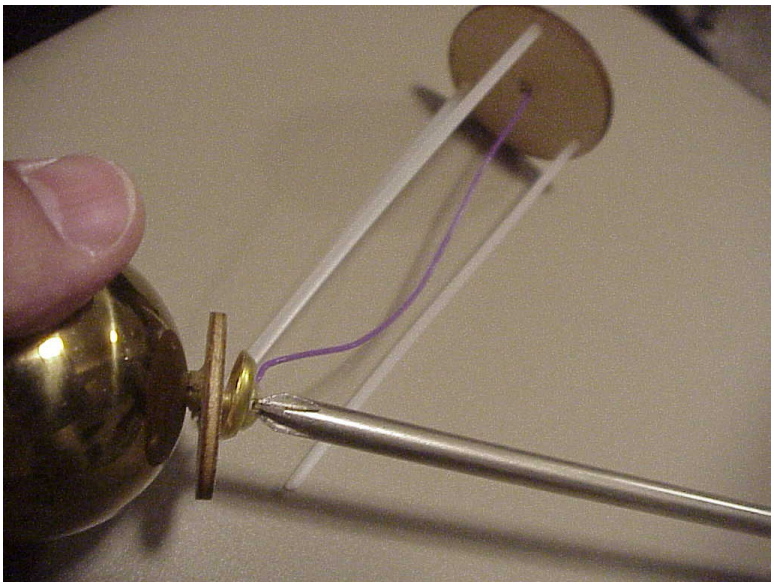
9. Thread 10-24 screw through brass finishing washer (wire soldered on its outer surface in Step 8), and into the upper 30mm wooden disc.



10. Install 1/8 inch triangular HDPE legs into the lower 50mm wooden disc.
11. Measure from lower 50mm disc after installing HDPE legs, cut legs at 12.5cm.



12. Cut connecting wire to 13.0cm from ower 50mm wooden disc (the scatteron base).



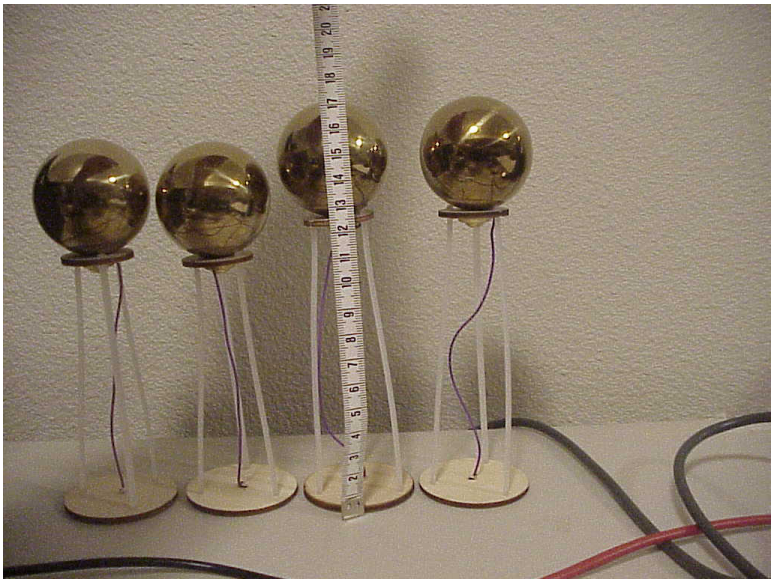
13. Screw upper 30mm wooden disc assembly into the hole in the steel globe. Do not over-tighten or the brass screw will become stripped.

14. Twist and press legs into 30mm upper wooden base. Assembly of this scatteron with 50mm lower wooden base is complete. Drop testing revealed it can separate yet the parts are easy to reassemble.

The two shorter scatterons (upper Right) are included with the Starter Kit.
The two scatterons (upper Left) with shorter legs are compared in the experiment below.

The experimental kit's sensor and microprocessor features discern this small difference in height of these two sets of globes through 100 feet of one-wire extension connection transmitter to receiver. Experimental study is provided below.

Shorter scatteron height of 13cm from its wooden base to center of 50mm steel globe.



The slightly taller scatteron (delivered with the Starter Kit) extends 15cm its 50mm wooden base attached to the 30mm upper wooden base and a 50mm steel globe supported by flexible HDPE legs.

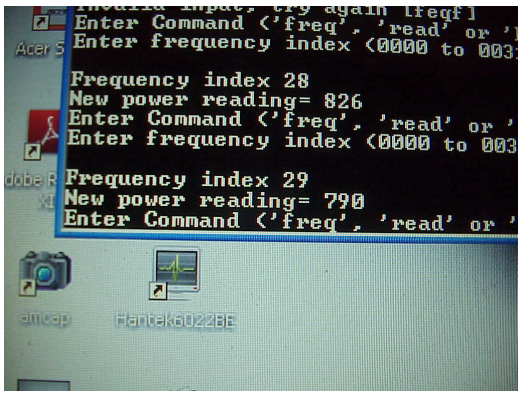
A is at the center of the spiral coil, and from this terminal the current is led by a conductor B to a terminal D, preferably of large surface, formed or maintained by such means as a balloon at an elevation suitable for the purposes of transmission, as before described.

As to the elevation of the terminals D D' it is obvious that it will be determined by a number of things, as by the amount and quality of the work to be performed, by the local density and other conditions of the atmosphere, by the character of the surrounding country, and such considerations as may present themselves in individual instances.

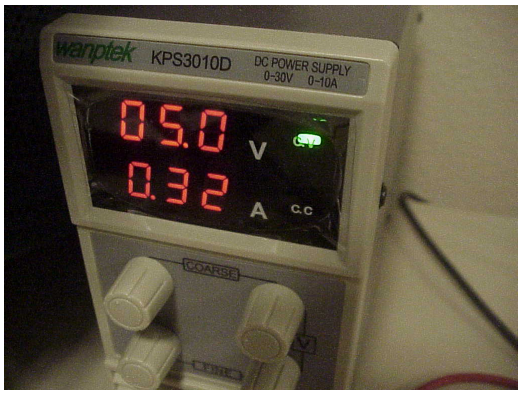
In the year 1900, Nikola Tesla provides insight from his Patent 645,576 excerpt above (Tesla invented this technology for use on the large-scale):

Terminal D referred to by Nikola Tesla corresponds to the spherical Scatteron.

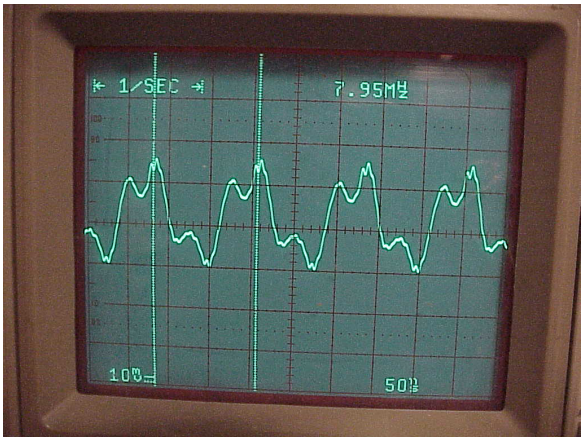
The elevation referred to by Nikola Tesla corresponds to the two different scatterons' height presented in this Application Note.



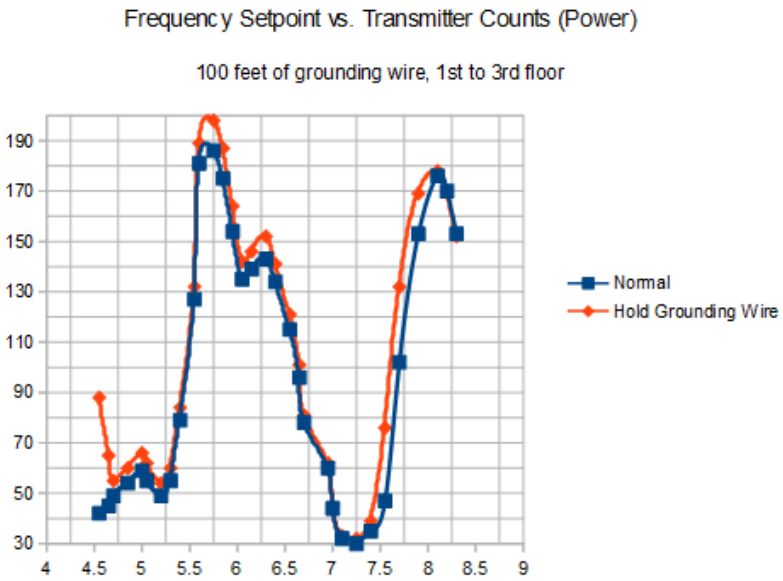
Connect the scatterons and grounding wire running to the third floor (with 100 feet of wire). Tune the transmitter using Teraterm user interface to the brightest illumination on the receiver LEDs (frequency index 29 near 8MHz in this case). Use a webcam, it's easier than running up 2 flights of stairs to see what the receiver measurements are.



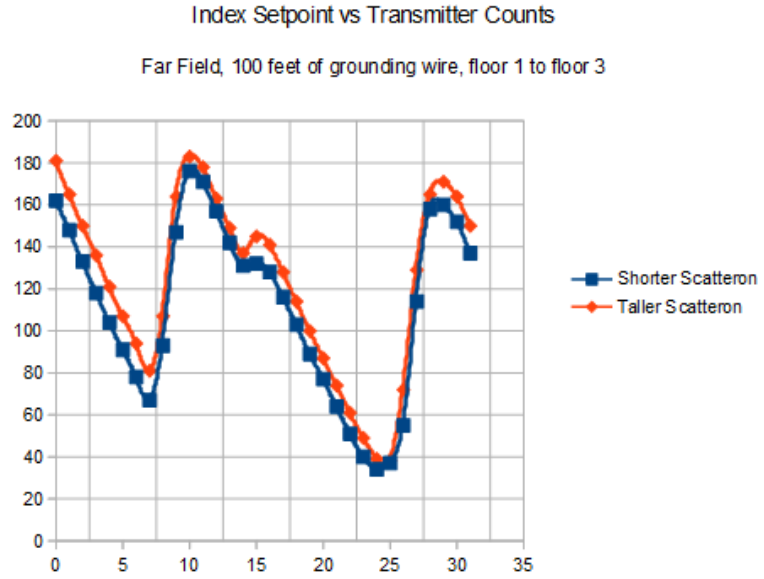
Oberve power supply current at peak receiver illumination of 320mA at 5V, and index of 29 producing the largest illumination at the receiver.



Observe transmitter current in the one-wire connection to receiver, using Pearson 4100 wide band current monitoring probe at 1 Amp per Volt and 10mV per division. Measure 2.5 divisions peak-to-peak or 25mA peak-to-peak, at 7.95MHz, in the photo above is measured in the one-wire connection and once tuned, the current is returning through the scatterons..



According to the above plot of power peaks vs. frequency recorded by the Starter Kit's Transmitter and computer user interface, and grasping by hand of the 100-foot grounding wire demonstrates a tuning sensitivity and near 8 MHz (longitudinal wave) where the receiver LED is brightest. The receiver LED did not illuminate at the more powerful 5.6MHz peak (the Transverse wave). The above plot was obtained simply by pressing RESET on the Starter Kit's transmitter whereby 32 frequency indexes created by the transmitter step 0 through 31 corresponding to frequency changes from 4.5MHZ to 8.5MHz. This dichotomy is an interesting characteristic of the tuned longitudinal or Scalar wave. A second dichotomy is the absent second harmonic of the fundamental lower peaking frequency of 5.6MHz. The ratio of peaking frequencies is 8.2MHz/5.8MHz = 1.4 and not 2.0 as one might expect to find. This ratio and the tuned frequency can vary due to atmospheric and environmental conditions. The meaning of 'tuned' in this context is the transmitter and receiver are in resonance near 8MHz, they are reflecting energy off one-another making a longitudinal vortex of some sort.



Comparison of the monitored power for two different scatteron heights reveals the taller scatteron pair provides a more powerful result at 8 MHz (frequency index 29 in this case).