# Alternative Energy Research

Utilizing

# Spatial Energy Coherence

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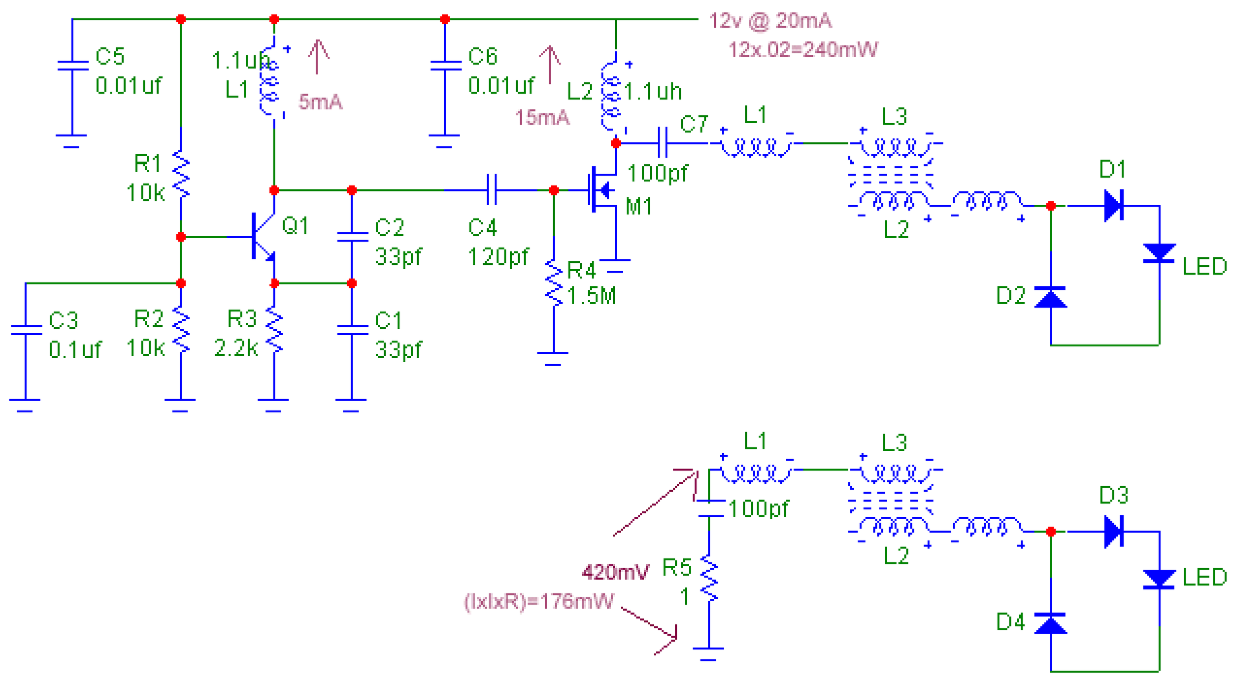
## Legacy Research and Systems

DO NOT LOOK AT THE SUPER WHITE LED's WHEN LIT
WITHOUT OSHA APPROVED EYE PROTECTION
INTENSE LIGHT VIEWED DIRECTLY COULD CAUSE EYE DAMAGE

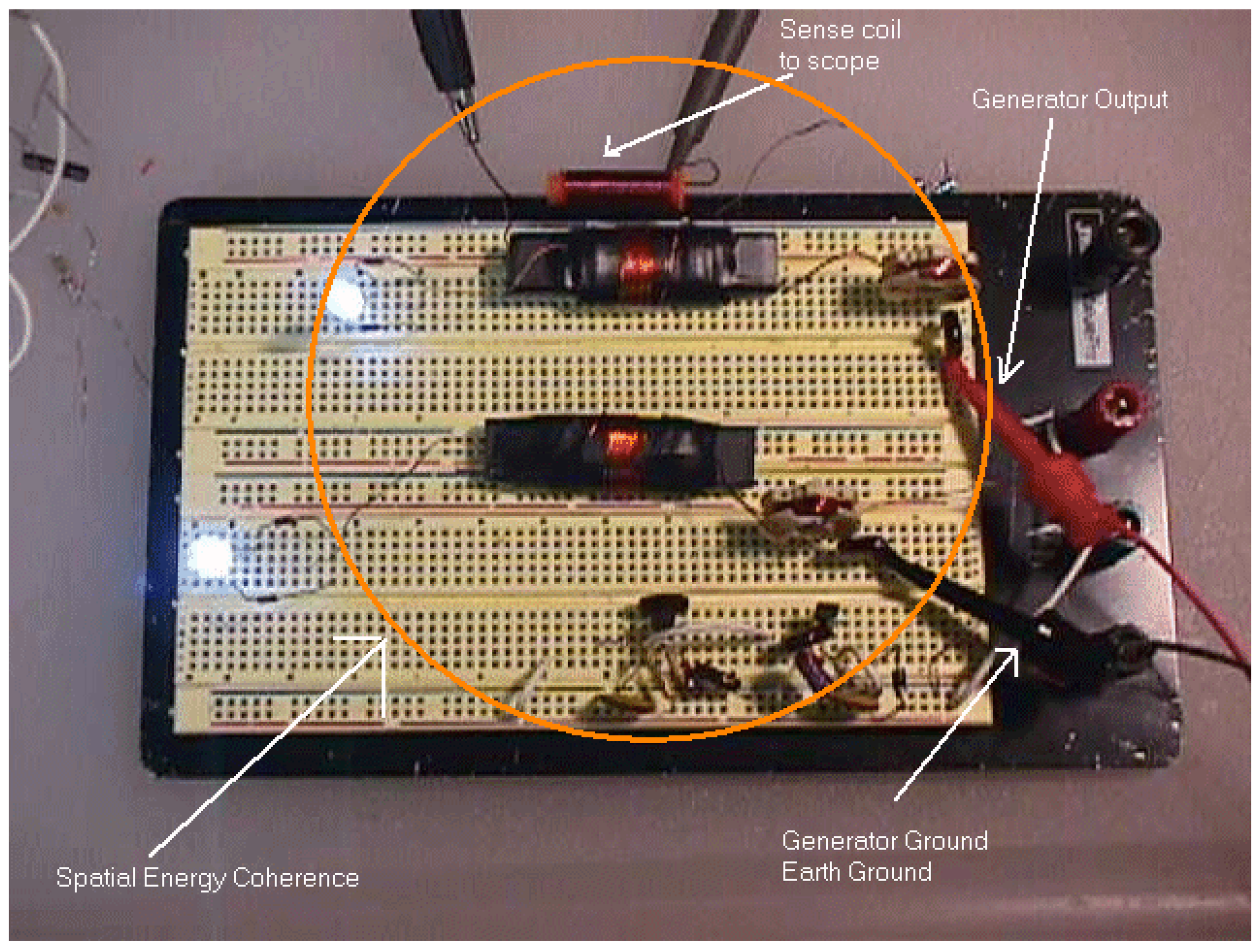
## Special and Noteworthy Circuit Preview

Spatial Coupling between a SEC Exciter and a parasitically coupled converter and LED driver. The coupled driver can be placed within the Spatial Field in any orientation without affecting the recovered energy.

It should be noted that this configuration is not a power transmission system; rather it is a Spatial Exciter stimulating the Spatial Lattice in the area of the Exciter thereby allowing the secondary circuit to pull in energy to power its load.




The following image is of a running circuit as described above. The secondary or parasitic power unit is shown at the top of the image with the sense coil next to the pickup coil. The secondary coil worked within a range of some 25cm from the exciter without any loss in captured energy.




### Introduction

This document will address what appears to be an anomalous energy cohering technology that integrates certain aspects of research by Tesla, Avramenko and Frolov. Based on a foundation developed from my own research on 'Energy Conversion by Articulated Transfer' or ECAT.

### History

The immediate questions are: What is this device (circuit)? What can it do? Is it Free Energy? Is it OU?

First let me explain my view on a couple of important and relevant topics that most people have heard or read about at one time or another, they are; OU or Over Unity, FE or Free Energy and COP or Coefficient of Performance.

The two that are most relevant to this device are OU and FE, let me explain. The standard meaning applied to OU or Over Unity is that you get back more than you put in. A simple example is you go to the bank and deposit $10 one day and return the next day to withdraw it. The bank gives you back $15, OU in a simplistic form, you received back more than you invested.

The concept of FE or Free Energy is that you obtain energy to power your car, home, appliances or whatever and do not incur a cost for the energy, zero power bills. In keeping with our first example, you go to a bank you have never deposited money with and they give you $10.

Let me now explain my view on Over Unity and Free Energy.

In my view of the Universe, it contains an enormous but finite amount of Potential Energy, I fully side with the current scientific view that you cannot create or destroy energy. Additionally I believe as man continues to evolve and science expands it knowledge that we will find many ways to tap into and utilize sources of energy that have always been available yet we did not understand or believe existed.

Science will eventually find the doorways to energy sources far exceeding fossil fuels or nuclear sources that currently support our existence. This new energy source will not be Free; it will not fit the definition of Free Energy. In reality man did not pay for fossil fuel sources, but he must pay to obtain them, therein explains why the term Free Energy has no meaning, Fee does not exist, nowhere in the Universe will you ever find Free Energy, there will always be a cost.

Now for OU or Over Unity, well again in my opinion this idea is in error. If you think you are getting something for nothing then you have not looked back far enough in the chain of events leading up to the specific observational point. Simply stated in a Law derived by Newton, 'For every action there is an equal and opposite reaction'. This most certainly applies to potential energies of all forms, real and hypothetical. Conversion of energy into a kinetic form does indeed ripple in effect both forward and backward in time in order to obtain a universal energy balance.

So now that I have explained that I do not adhere to the concepts of OU and FE lets move forward with the understanding that OU and FE are erroneous views on what will eventually become a common straight forward method of accessing and using a currently and universally available form of energy. A form that already exists, that is intimately entwined with all other forms and passes through multiple conversion processes to return to its original potential form after being manifested in a kinetic form.

Credit is given to the following inventors and researchers that performed work in similar if not the same area.

Alexander V. Frolov[1] , titled "The Work that is Created by Means of Potential Field", taken from the Report on the International Conference ‘New Ideas in Natural Sciences’ St.-Petersburg, June 1996.

The paper covered work by it originator S. V. Avramenko[2] , titled "The Measuring of Conduction Current That is Stimulated by Polarization Current", published in the 'Journal of Russian Physical Society, No# 2, 1991'.

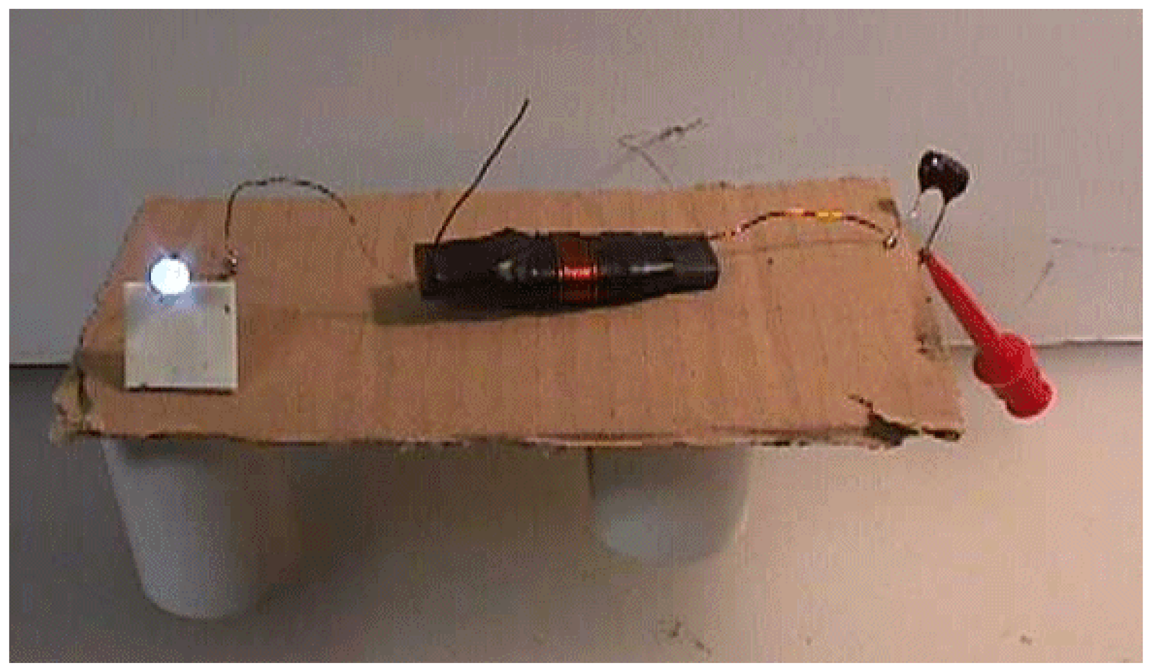
At approximately the same time, (shortly thereafter) JLN Labs[3] ‚posted experiments which followed more closely the Avramenko single line transmission work.

Some work was also done and available on a website by Stefan Hartmann[4] ,although these pages appear to no longer be available.

Stiffler Scientific, Plasma Power

**Simple Starting Point**

**Fig: S1**



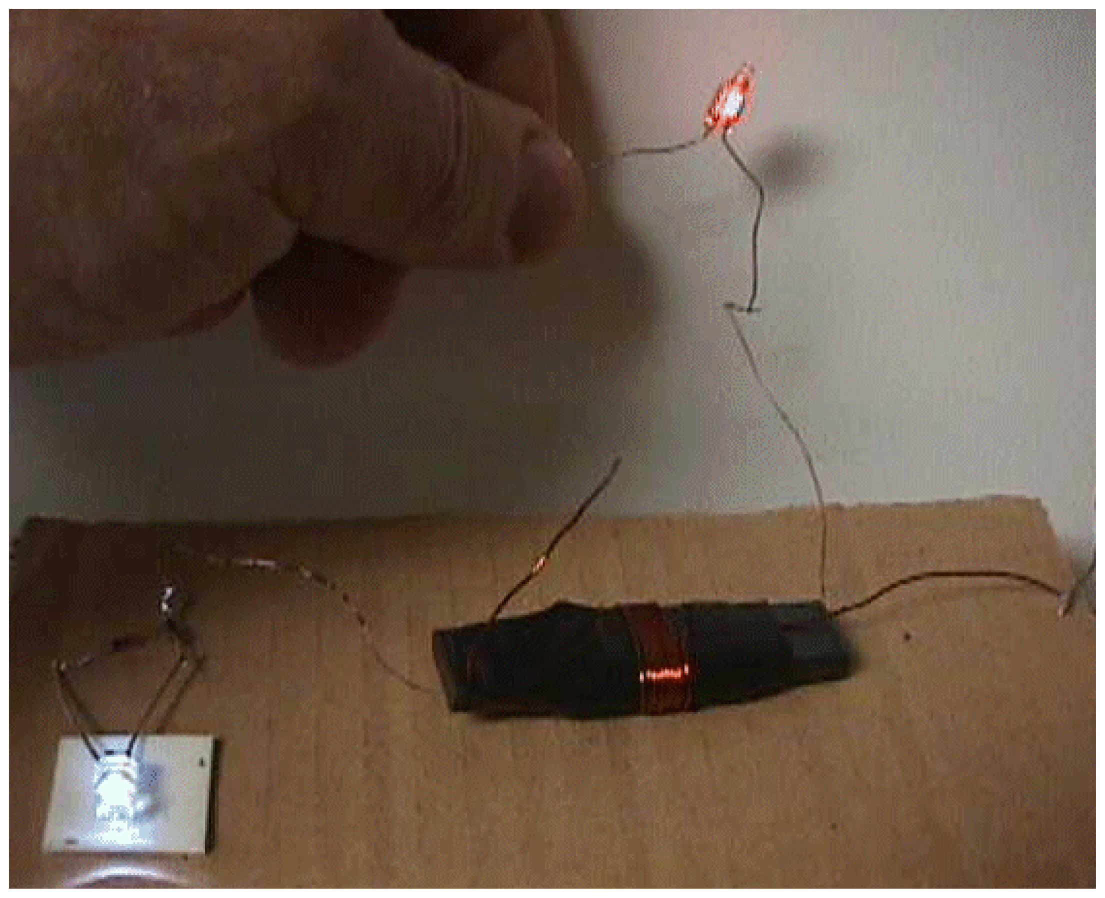
Many hundreds of questions have risen over this ongoing work and among them are those asking why one needs to attempt duplication in exact detail as I present it. The simple answer is 'You don't', but it will certainly save you a lot of frustration and possible failure.

I use proto-typing boards because they are most convenient and allow for rapid redesign and do not require soldering and the ultimate destruction of parts from solder residue on leads or leads that are to short to reuse. In an effort to see if I could find some alternate method (although not supported) I build the simplest of replications with one LED as shown in the preceding photo.

The photo shows a small piece of cardboard sitting on top of 3/4" PVC pipe couplings. The single lead of the generator is coupled to the coil through a 400pF Mica capacitor. On the White LED are soldered the two 1N914 diodes and the input capacitor is soldered the coil primary.

As seen in the following photo, some very interesting and startling observations can be made with this same simple circuit configuration. The photo shows a neon bulb being lit to full brilliance by holding one end and touching the other bulb end to the free secondary wire. As seen in the photo the neon does not affect the operation or brightness of the White LED connected to the opposite end of the secondary.

**Fig: S2**

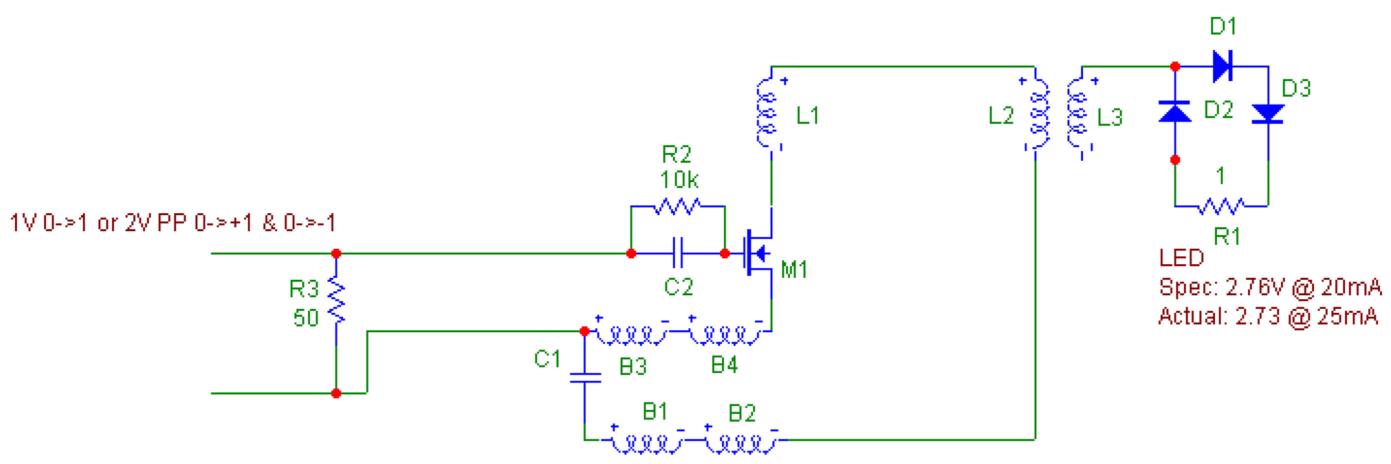


It must be understood that certain facets of this work and the replication thereof will require a certain level of electronics knowledge and some basic test equipment. Without these resources you results and observations are drastically limited.

**Additional Design Instructions**

**A more advanced approach.**

Requires no power supply as power is derived by special phasing and access to the Spatial Energy Lattice.




**Circuit Comments**

B1,B2,B2 & B4 with C1 form a delay line.

Removal of C1 will stop circuit operation and extinguish the LED.
Replacing C1 with a wire will reduce the LED output to barely visible or extinguished.
Removal of B1,B2,B2 & B4 and C1 and replacing with a short wire will extinguish the LED.

Pay special attention to the supplied scope pictures of this circuit in operation and not that the Peak-to-Peak voltage present at the junction (+rail) of B2 and L2 is ~8 (Scope{4}) volts. This voltage should always be higher than the input when the circuit is properly tuned into operational mode.

Tuning for maximum power at the LED is subjective if you use human visual reference for the amount of LED light output. This can get you close, but is not the most accurate way to find the three peaks available. I use a Lutron light meter and a black isolation tube around the LED. The circuit can be tuned for maximum light output, although this can also be in error due to the way LED's react to excitation at different frequencies, yet this can be an acceptable preliminary observation.

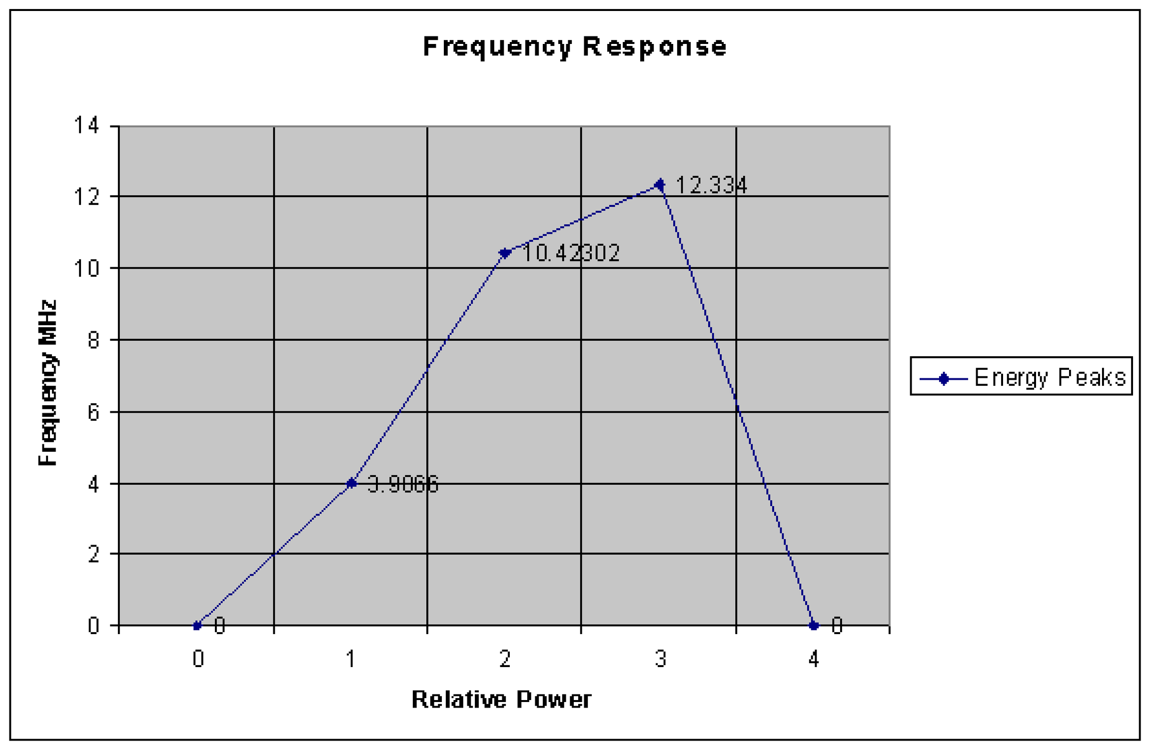
The most accurate I have found so far is using a small form factor (small size and mass) DVM (accuracy not important) with leads as short as possible connected across a 10k ohm resistor, bridged with a 5uf capacitor at the output of the rectifiers. With this configuration one can tune input for maximum voltage indication. The down side to this method is that the added L and C of the meter and connections do indeed shift the optimal peaks.

During tuning using both of the methods indicated above, the peaks (excluding LED frequency response) fall within ~+/- 200khz of each other.

The peak frequencies have been derived by scope and counter measurement, with the most accurate being the frequency counter. This circuit appears to 'Hunt' and therefore even the counter cannot be considered totally accurate, as the readings will vary over many kilohertz as the circuit 'Hunts' for stability.

The following chart shows the frequency versus relative power from a test run on Circuit (4), using the DVM method of measurement and reading the frequency with a counter with 0.001% accuracy.




The following table shows the measured frequency peaks and their first three harmonics.

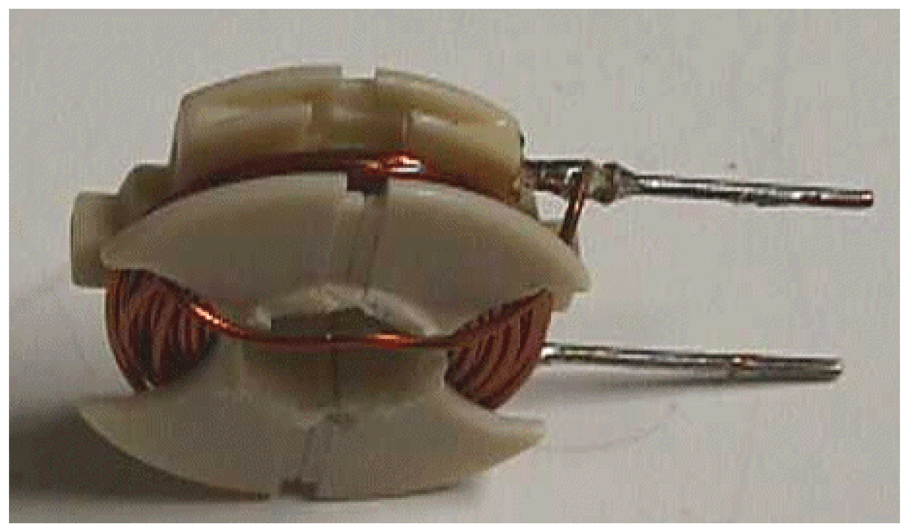
| | | | |
|---|---|---|---|
| Measured (MHz) | 3.9866 | 10.4230 | 12.3340 |
| X2 | 7.9732 | 20.8460 | 24.6680 |
| X3 | 11.9598 | 31.2690 | 37.0020 |
| X4 | 15.9464 | 41.6920 | 49.3360 |

It is noted at this point that in the scope traces (for #4) included below show scope-measured frequencies of 6.99MHz, 7.14MHz and 10MHz. The trace was not expanded as it should have been to obtain a more accurate reading, yet there can be seen a correlation with the counter readings.

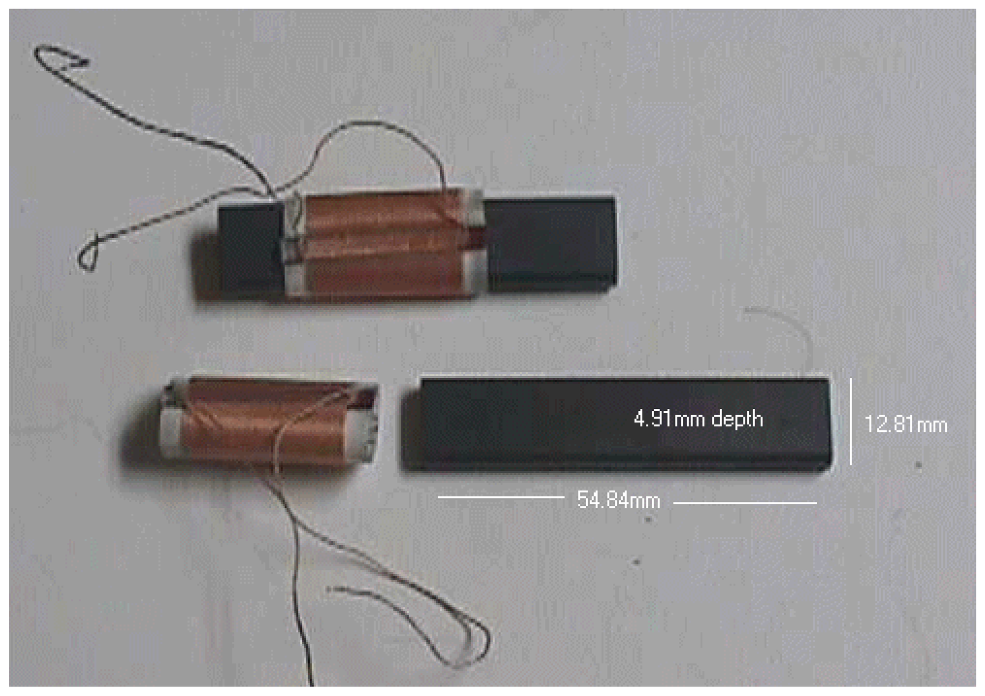
**Parts List**

| | | |
|---|---|---|
| R1 | 1 ohm 1% 1/4W Carbon Composition | |
| R2 | 10K ohm 1/4W Carbon Film | |
| R3 | 50 ohm 1/4W Carbon Film | |
| C1 | 0.01uf 1kv +/- 20% ceramic Z5U temperature coefficient | |
| C2 | 10pf 500V +/-5% Dipped Silver Mica | |
| D1 | 1N4148 100VRRM 0.5A (Switching) | |
| D2 | 1N4148 100VRRM 0.5A (Switching) | |
| D3 | Blue LED 2.76V @ 20mA | |
| L1 | 2.2uH, Core Diameter 6.49mm Coil Width 2.80mm Wire 0.58mm enamal coated | Picture below |
| | Transistor radio loop antenna coil and core, origin unknown, manufacture unknown most likely China. | |
| L2 | 59uH free of core +/- 15%<br>686uH on core +/- 15%<br>The wire is to multi-strand, size smaller than a human hair, inter-woven with Cambric or Cotton and bundle is corron covered. | Picture below |
| L3 | 9 turns of 0.018" enamal coated wire over the top and in the center of L2. L2 is covered with one layer of paper tape. Care when winding, not to tight to damage L2. | |
| *** | Interwinding capacity, the capacity measured between L3 & L3 (mounted on core) | 29.3pf |
| | RF suppression ferrite beads | |
| B1,B2,B3,B4 | 0.551" Length<br>0.140" Diameter<br>0.025" core dis. | |
| M1 | 2N7000 | |

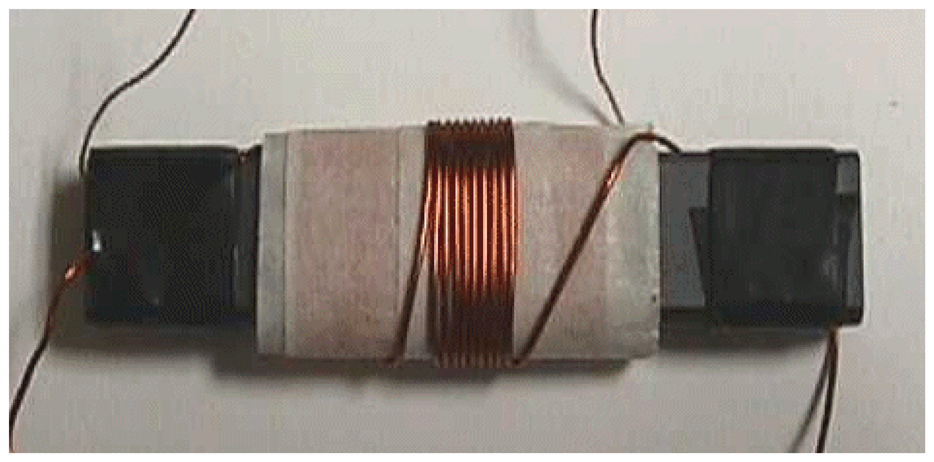
**L1**



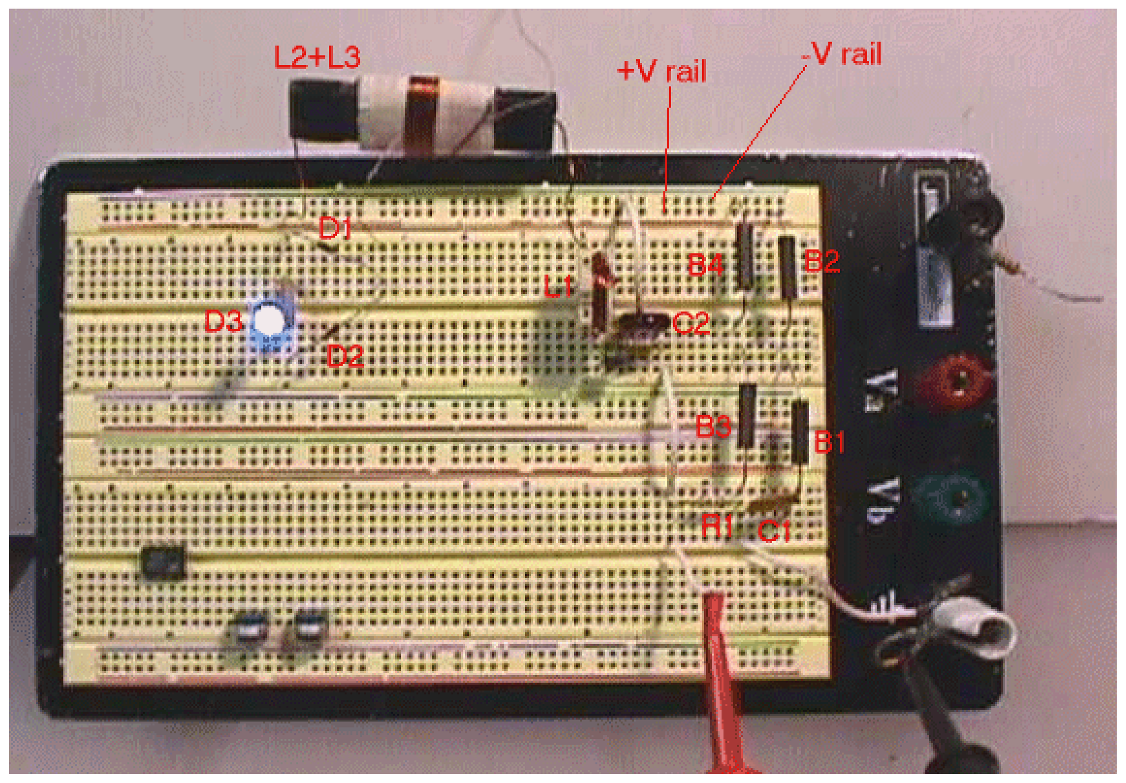
**L2**



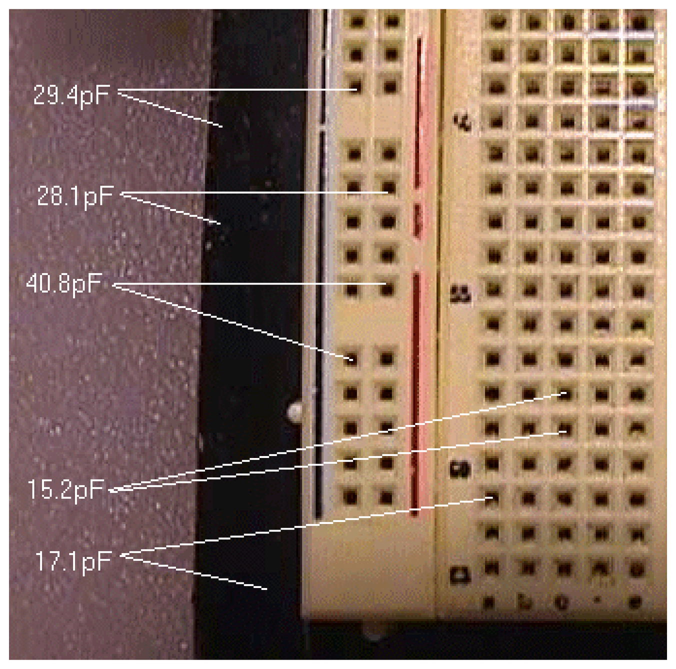

**L2+L3**



**Layout**



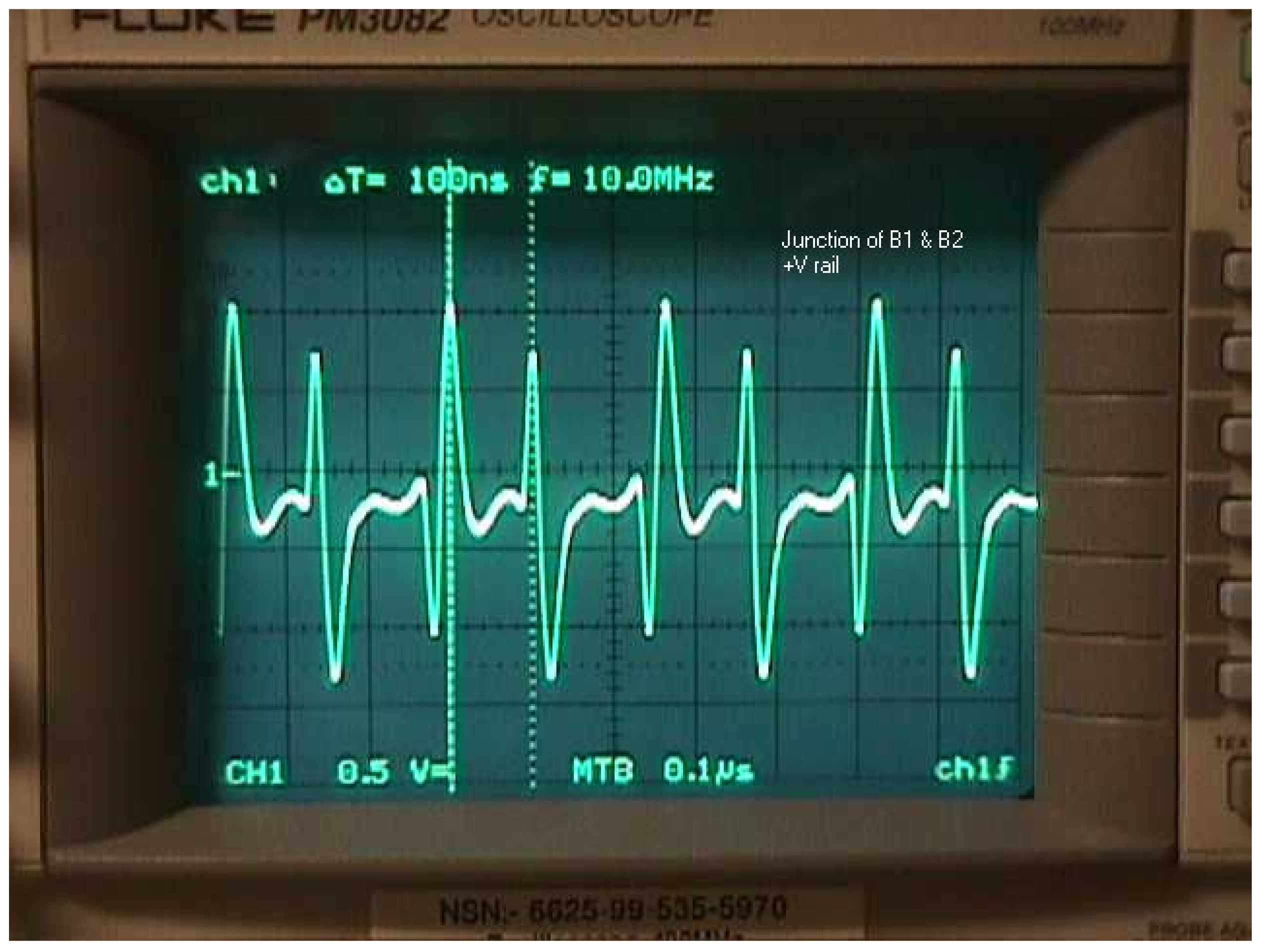

**Plug Board Capacities**



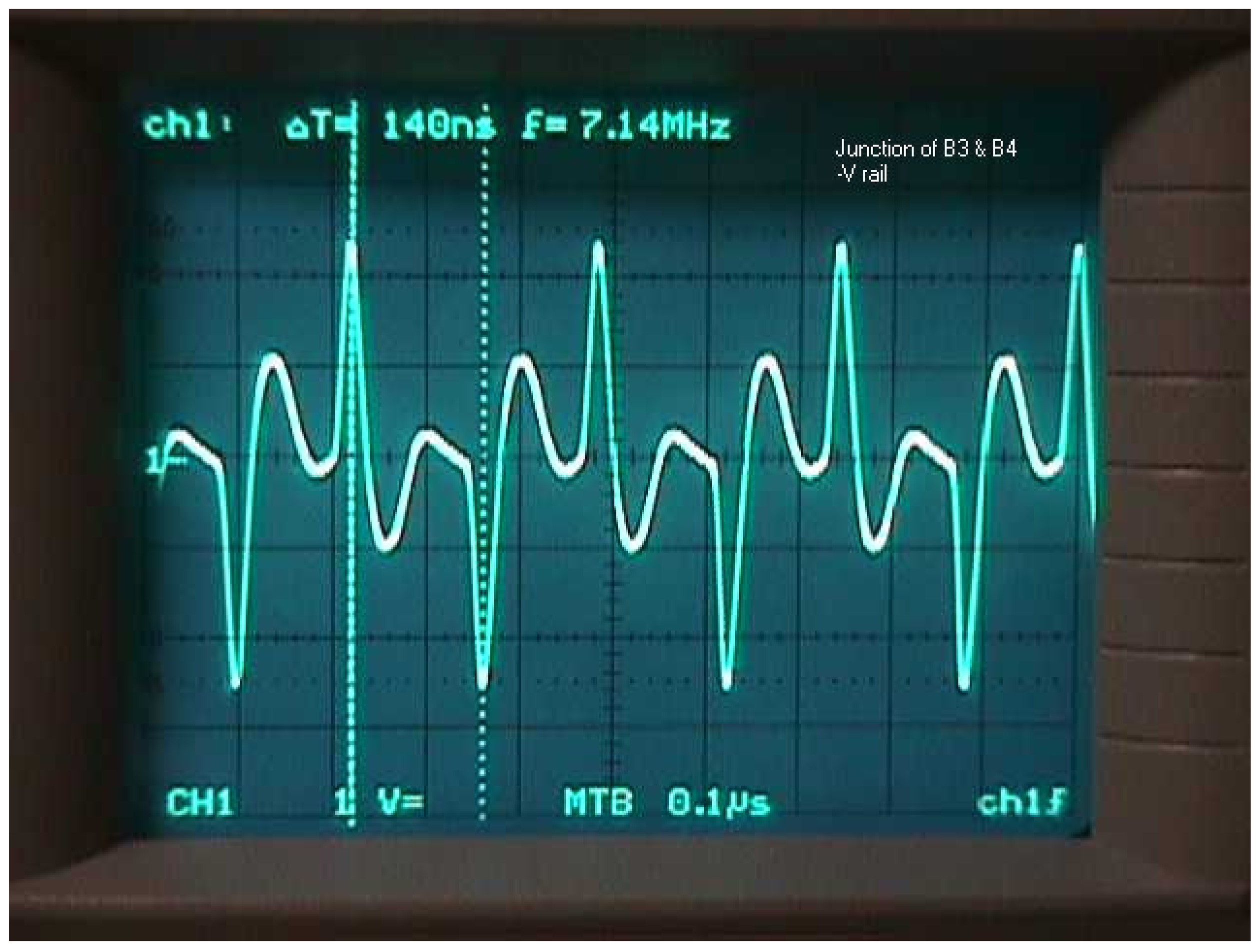

The two power rails that are parallel have an inner capacity of 40.8pF, additionally each rail has a capacity to the aluminum back plate. When components are connected the also have an inner strip capacity as indicated.

These capacities are a part of the overall circuit and must be accounted for in its design. If the circuit is not constructed on a similar board with similar capacities then additional capacitance may be required to replace that not supplied by the board.

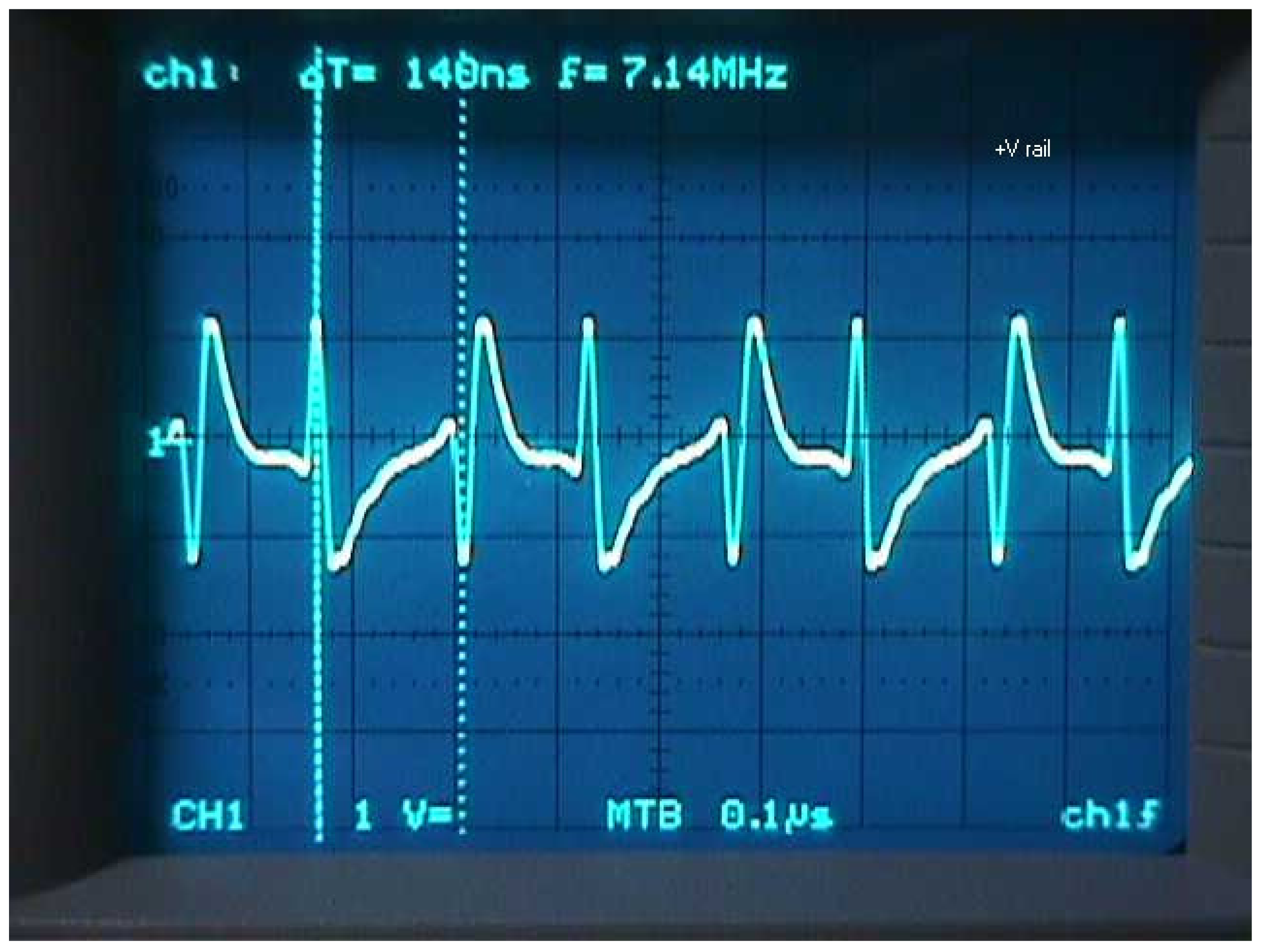
**Scope{1}...**



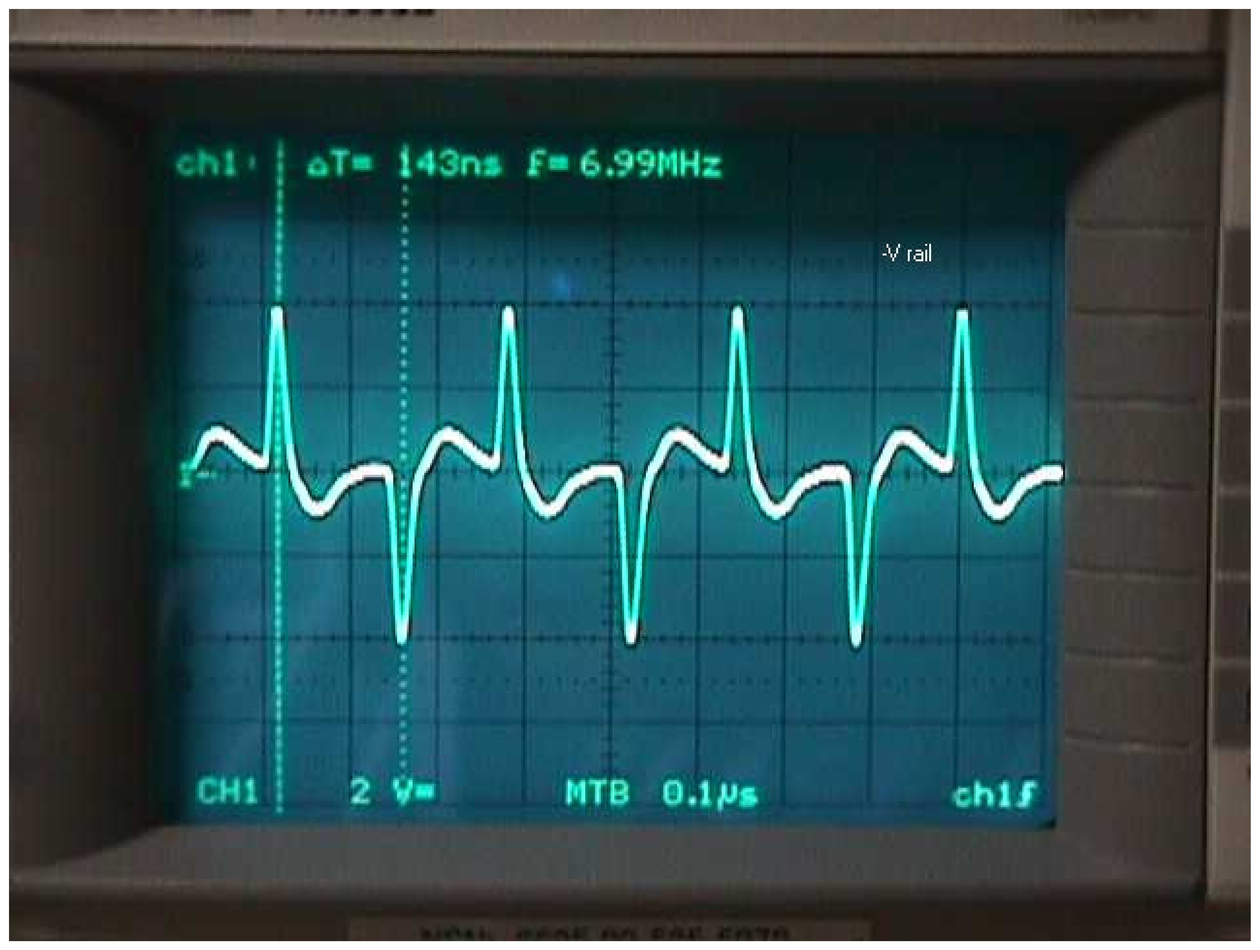

**Scope{2}...**



**Scope{3}...**




**Scope{4}...**




**Test Equipment (used in this research)**

*Oscilloscopes*

Tektronix 2445, Probes - 10:1, 10M/10.8pf P/N P6131
Fluke PM3082, Probes - 10:1, 10M/12pf P/N PM9010/091  1:1. 56pf P/N PM9001/001
Velleman HPS40 - 10:1/1:1 integral 10M

*DVM*

Extech 430
Extech MA200
Fluke 8022A
MasTech M-830B

*LCR*

Elenco 1810

*Signal Generators*

Wavetek 181
B&K 3017A

*Light Meter*

Lutron Model LX-1180

**PART #2**

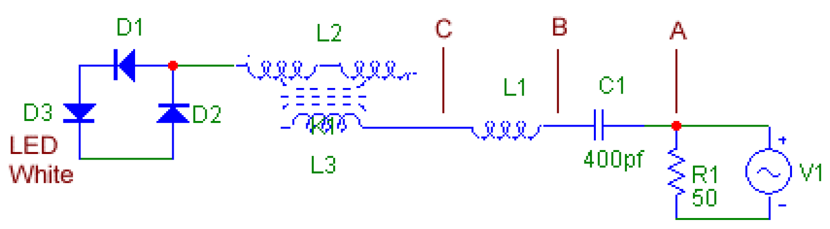
**Introduction**

This document will address a much simpler circuit configuration then what is covered in Part#1.

**History**

See Part#1 for the History of this particular circuit.

**Fig: 01 - Basic circuit diagram**




**Parts List**

R1 50 ohm 5% 1/4W Film
C1 400pf 500V Silver Mica
D1 1N4148 100VRRM 0.5A 'Vishay'
D2 1N4148 100VRRM 0.5A 'Vishay'

D3 White LED 3.8V @ 20mA, Ultra Bright. MCDL-5013UWC

L1 2.2uH, Core Diameter 6.49mm Coil Width 2.80mm Wire 0.58mm enamal coated

L2 Transistor radio loop antenna coil and core, origin unknown, manufacture unknown most likely China.

59uH free of core +/- 15%
686uH on core +/- 15%

The wire is to multi-strand, size smaller than a human hair, inter-woven with Cambric or Cotton and bundle is corron covered.

L3 9 turns of 0.018" enamal coated wire over the top and in the center of L2. L2 is covered with one layer of paper tape. Care when winding, not to tight to damage L2.

**Fig: 02 - Scope Trace for Test Point (A) to Generator Ground**

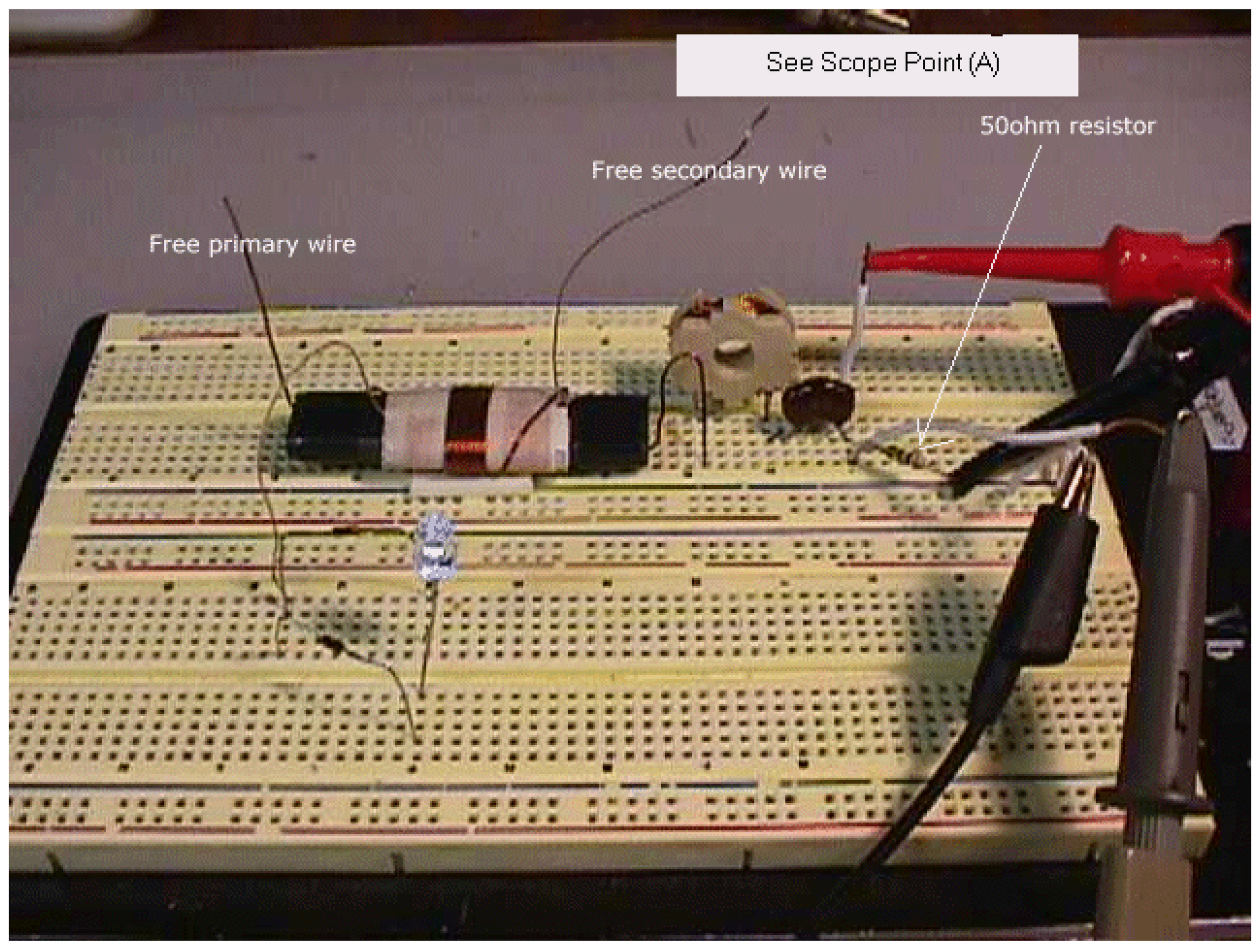



Fig: 03

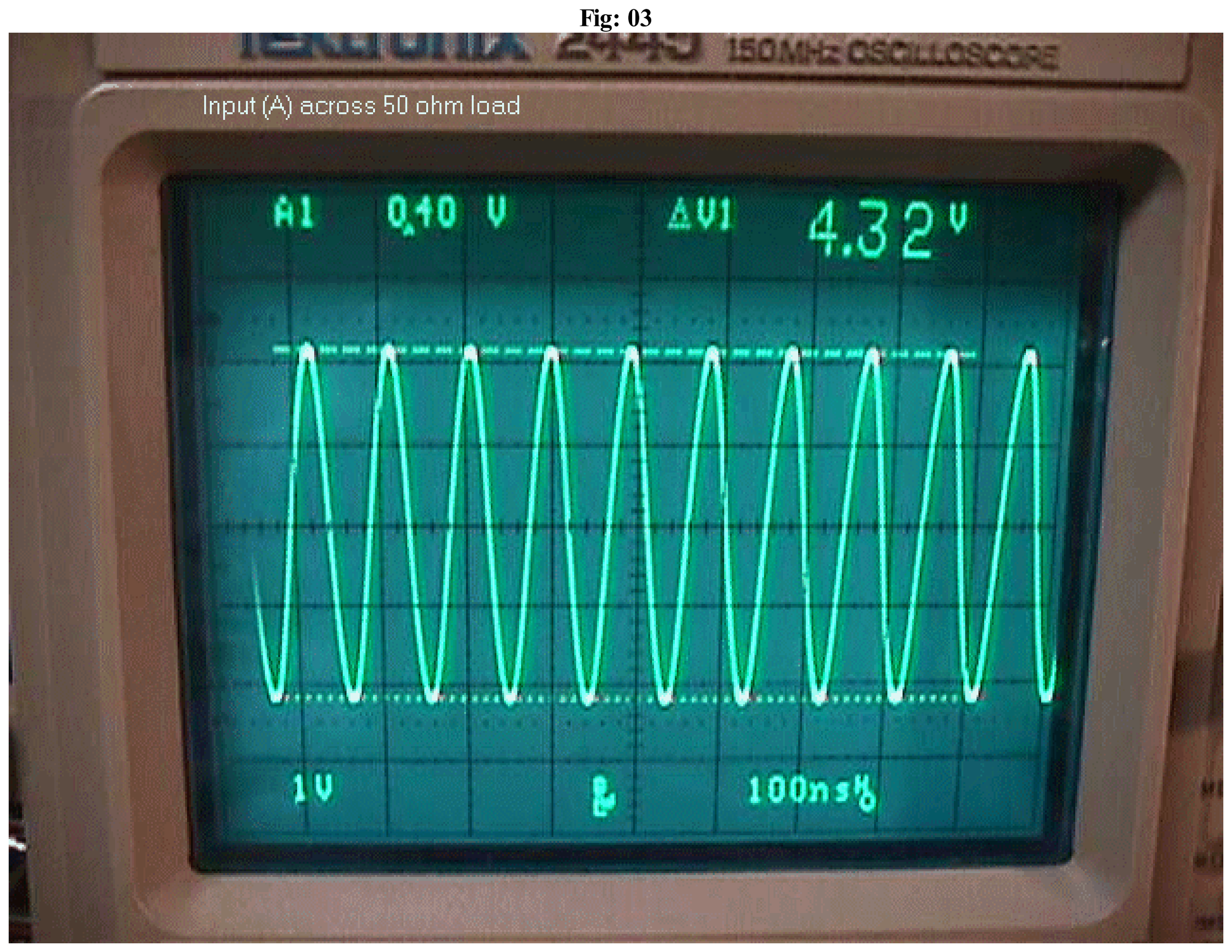



**Fig: 04**

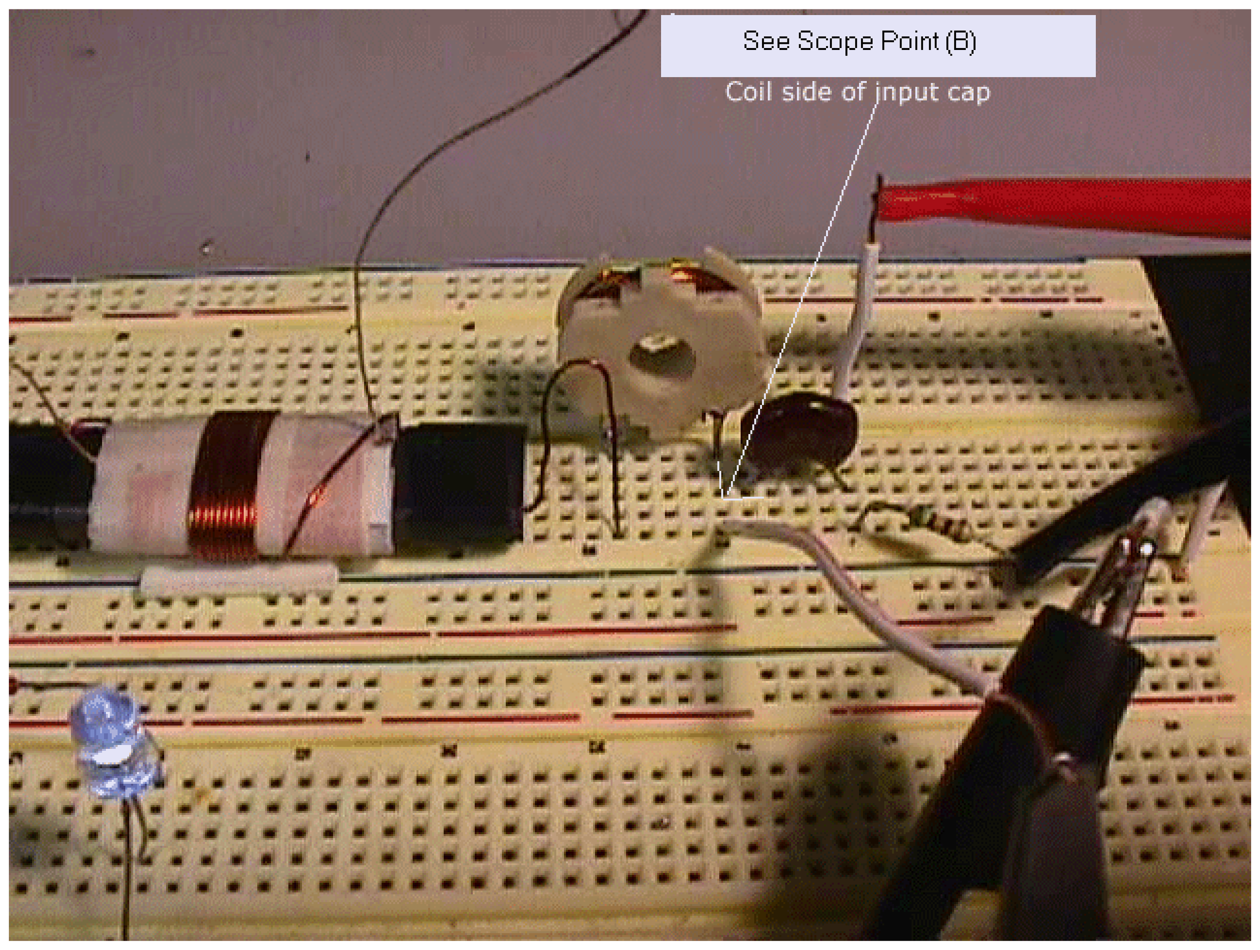



**Fig: 05**

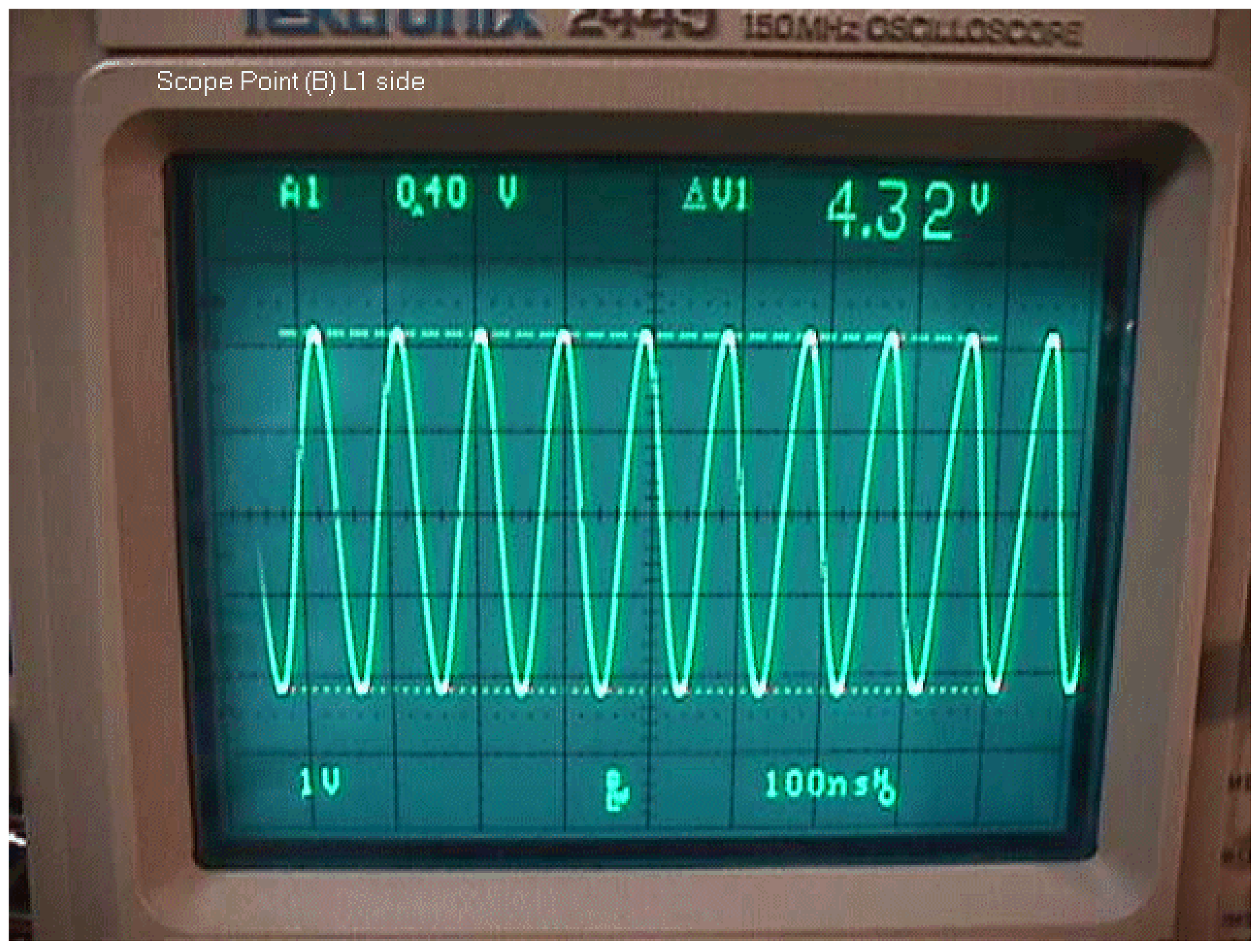



**Fig: 06**

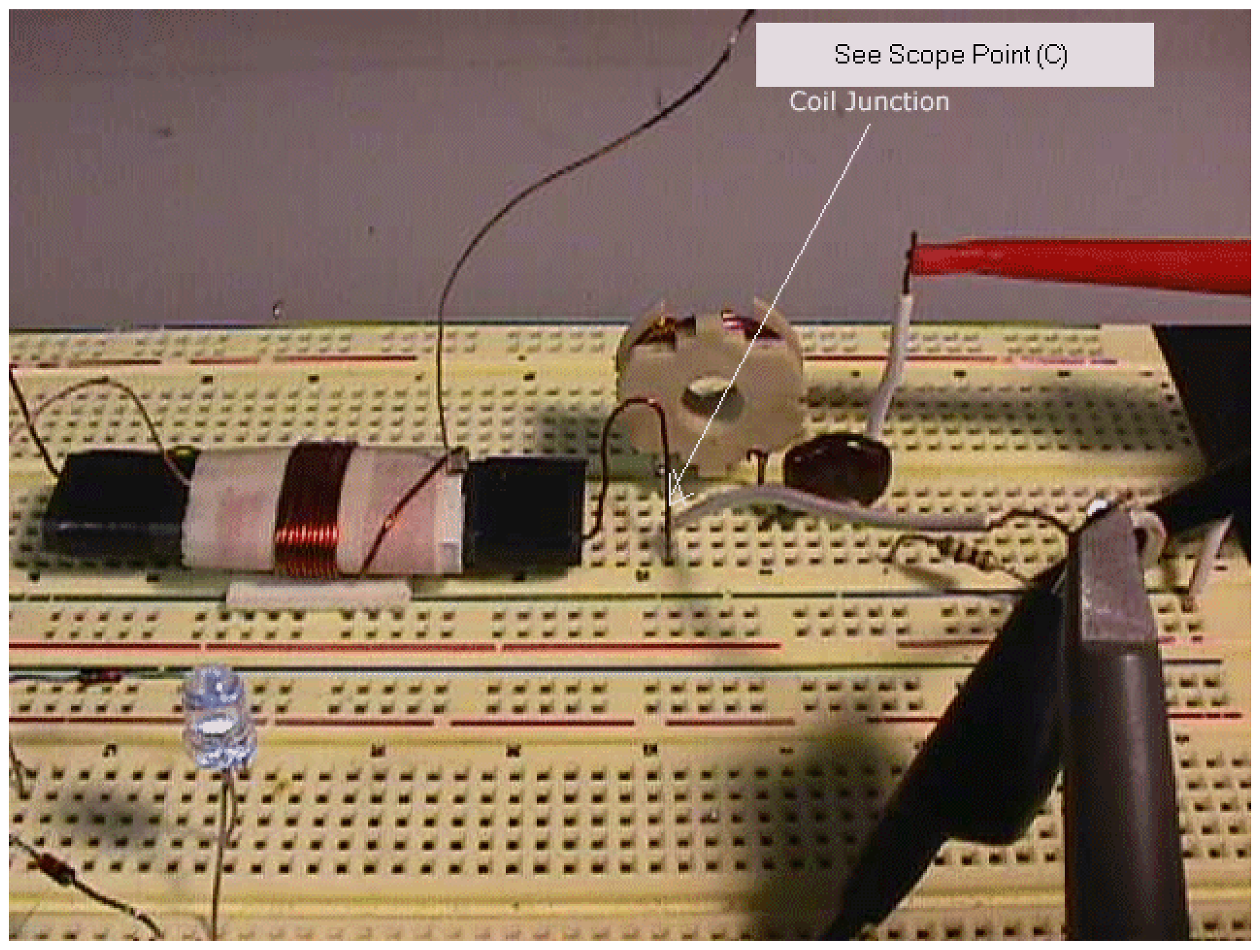
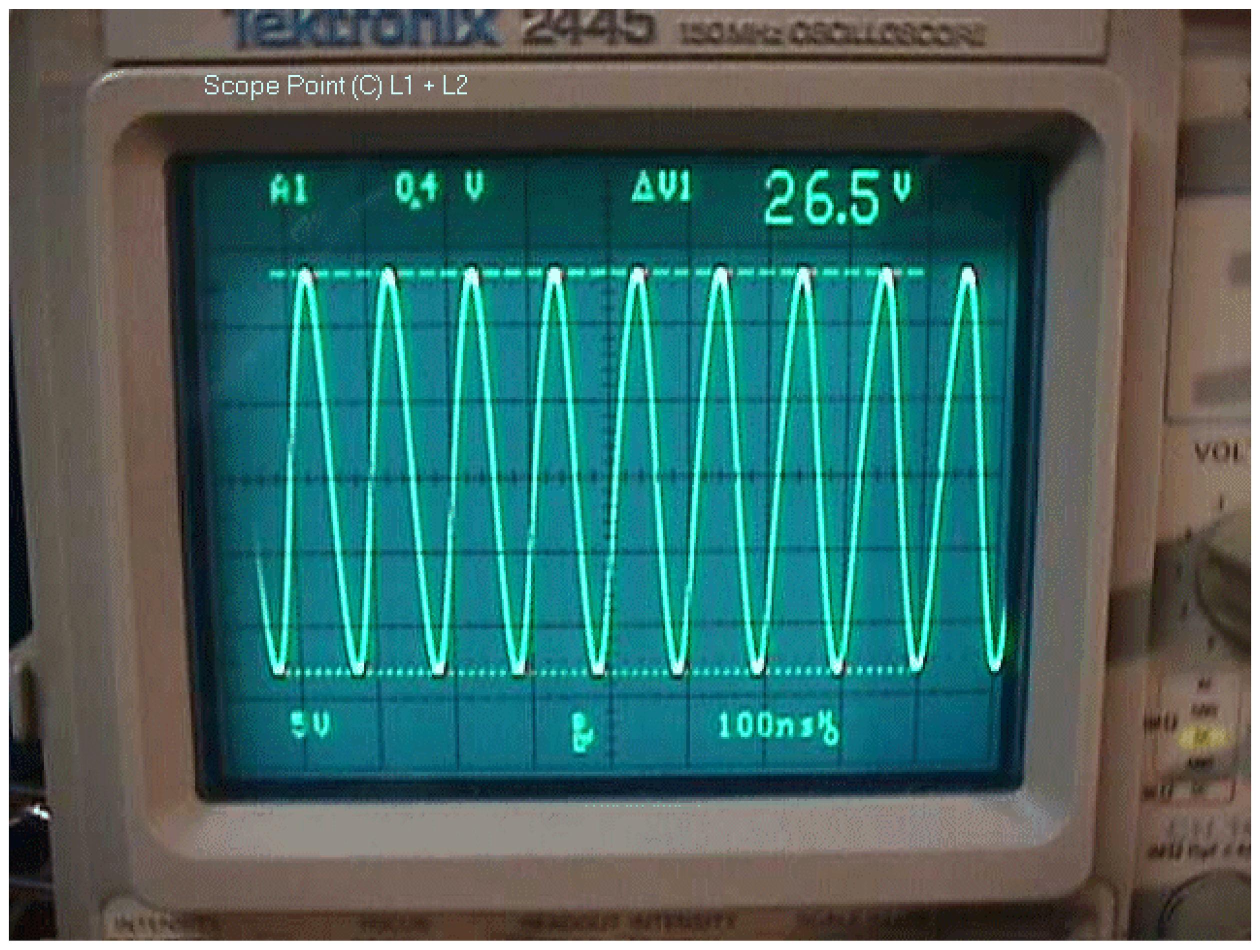



**Fig: 07**




Phase shift between (A) and (C)
Note the almost perfect 90' offset, as expected.

**Fig: 08**

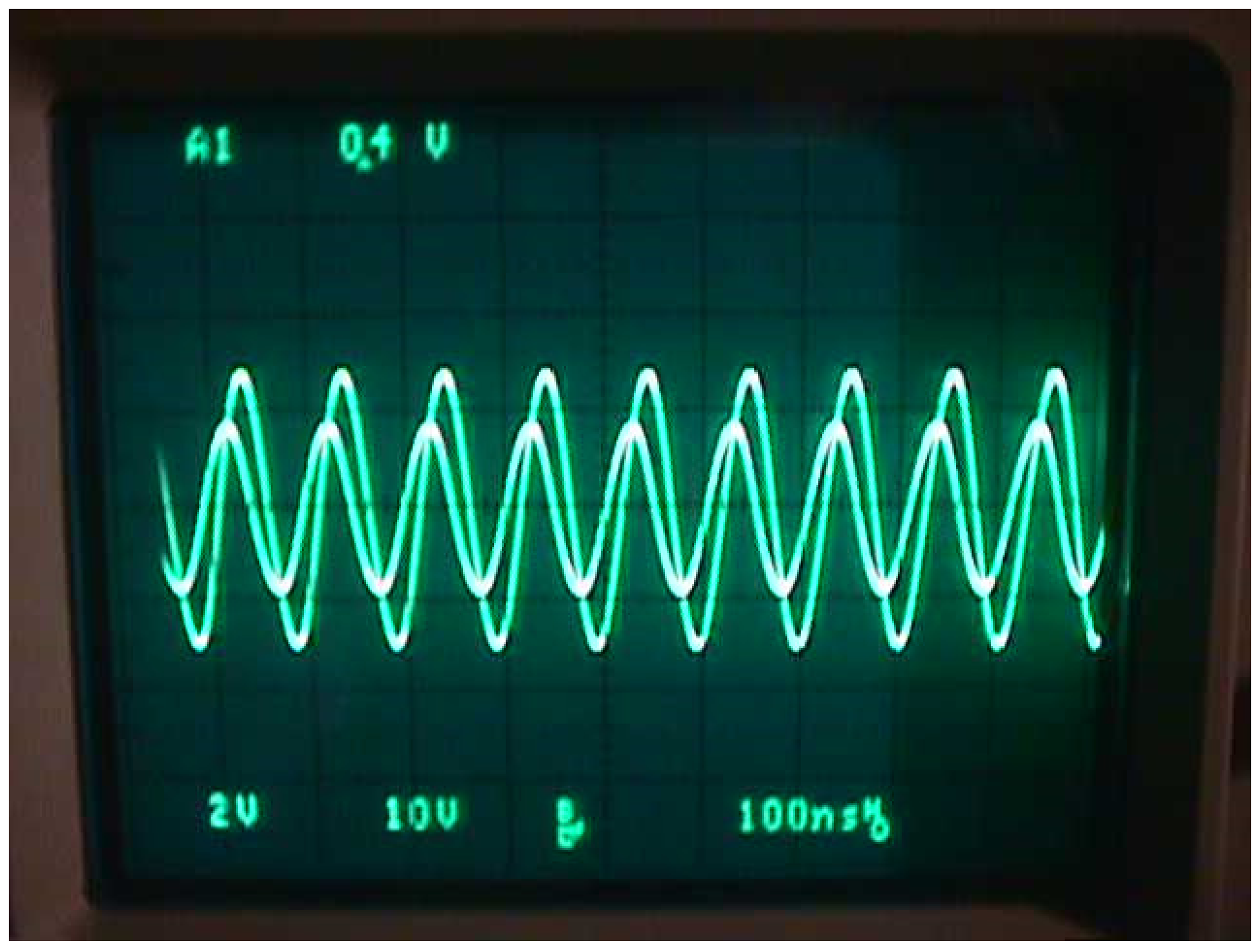
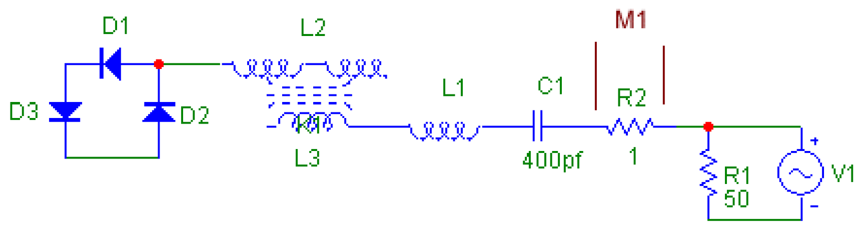


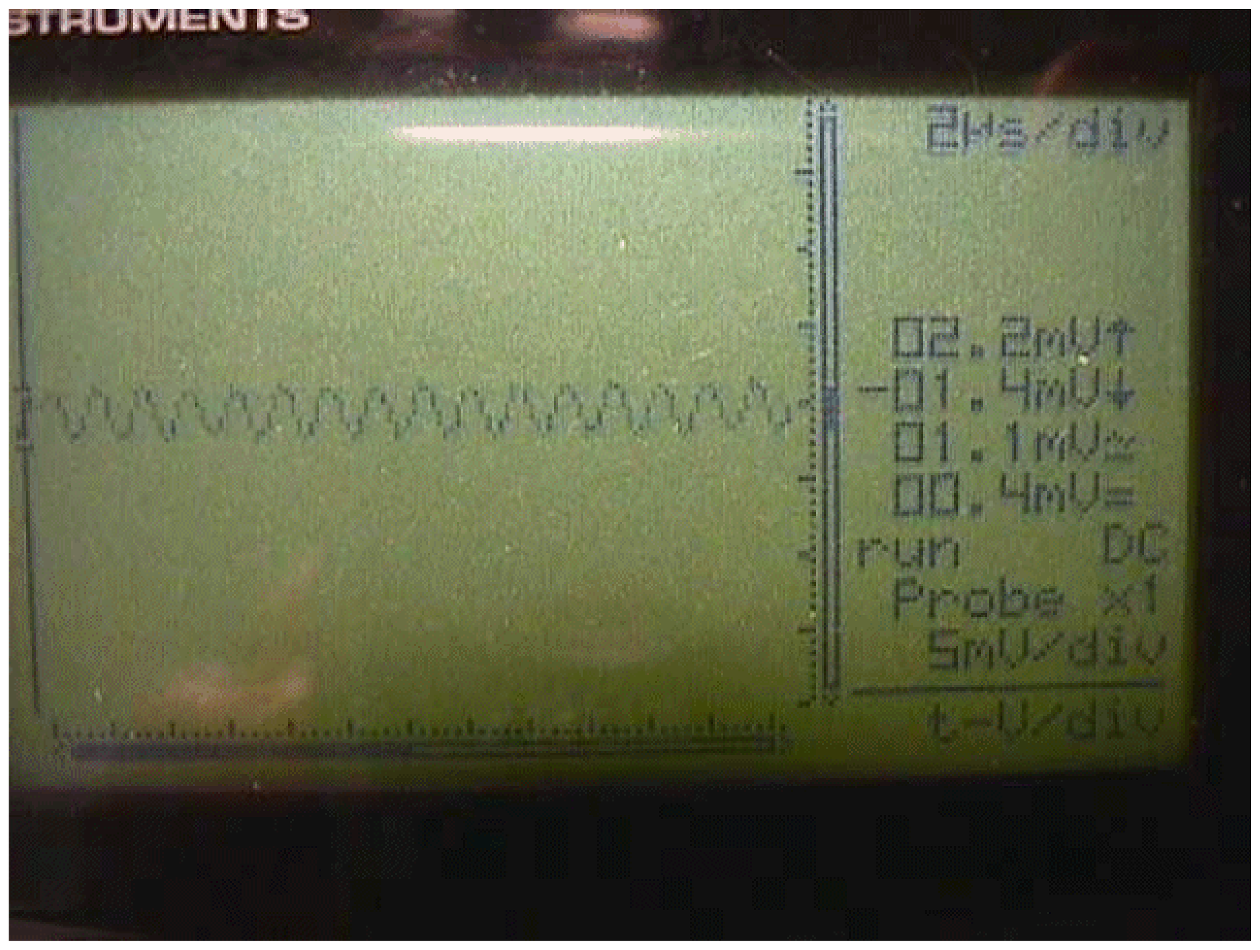

**Fig: 09 - Measuring Input current across 1 ohm with integrating digital scope.**




A lack of linearity is seen in this reading. The negative portion of the cycle does not equal the positive portion. The Real value indicates 1.1mW with a 0.4mV DC offset.

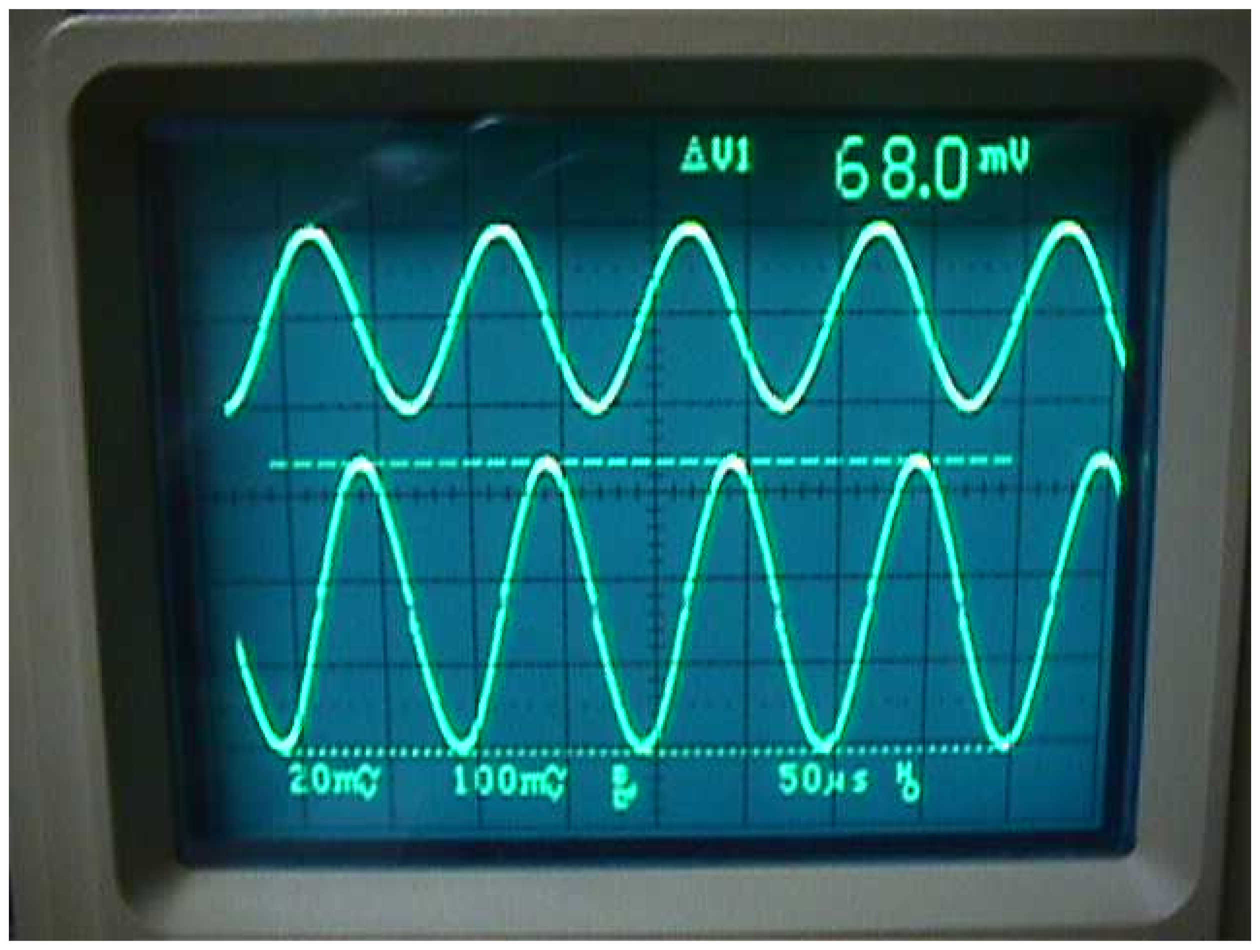
What is not currently understood is why the addition of a capacitor in place of the LED reflects an increase of current through R2. The charge rate of a capacitor of up to 450uf is <1 second. Multiple LEDs with equalization resistors can be added to the output, without increasing current in R2, yet capacity does.

**Fig: 10**



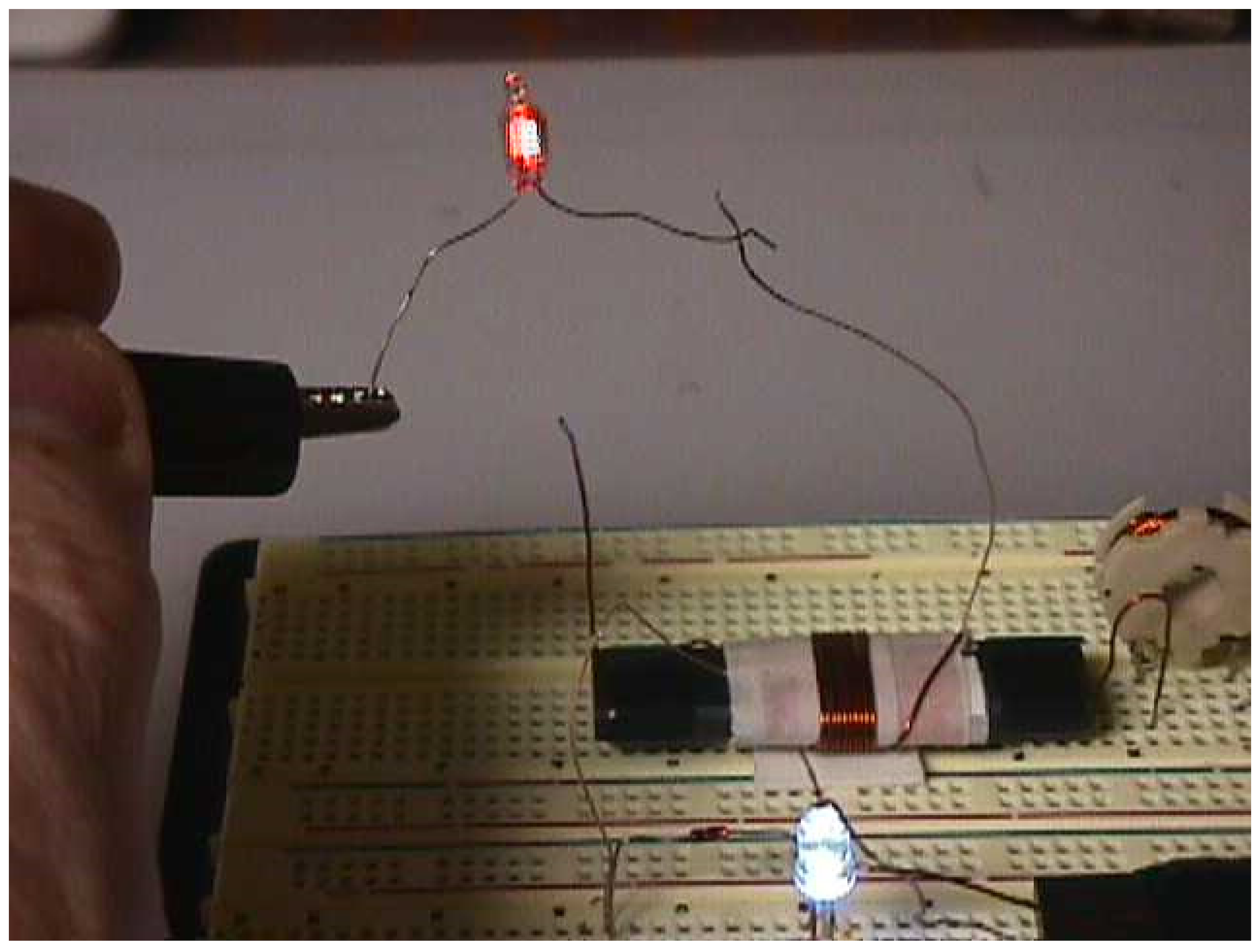

Coil L2 and L3 Voltage Ratio, Input on L2 40mVPP, Output on L3 68mVPP @ 10kHz.
Readings taken free of circuit components. Appears to be ~ 1:1.7

**Fig: 11**




On the free end of the secondary a voltage is present en excess of 100 volts, while the other end is driving the rectifier circuit and the LED. The black lead on the end of the neon is an earth ground.

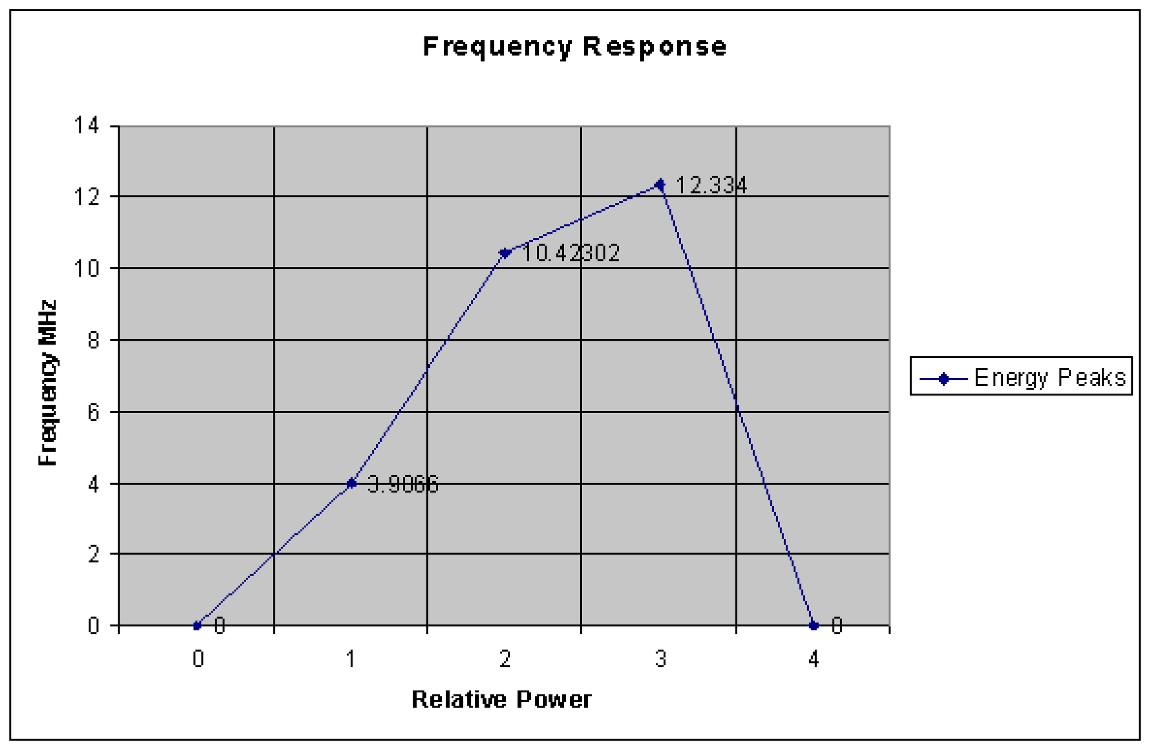
**Fig: 12**



The isolated circuit with only ground lead and powering 16 LEDs

**Fig: 13**

**Fig: 15**




Although is there a possible correlation to the second harmonic of 3.9866 Mhz as seen in the following table taken from the prior circuits. The difference between 7.9732 - 7.0830 = 0.89020, not very likely. So the question exists, why do the operation points shift so far. If it is a core resonance, should it be possible to shift it this far?

| | | | |
|---|---|---|---|
| Measured (MHz) | 3.9866 | 10.4230 | 12.3340 |
| X2 | 7.9732 | 20.8460 | 24.6680 |
| X3 | 11.9598 | 31.2690 | 37.0020 |
| X4 | 15.9464 | 41.6920 | 49.3360 |

To test for core resonance points, capacity couple to the aluminum backing plate with no more than 27pf cap in series with the hot lead of the generator. The ground of the generator is not connected to the circuit in any way. A sweep generator fed through the coupling capacitor should show responses in the following ranges. (Valid for coil L2+L3 specified in parts list)

1.2 MHz +/- 100KHz
3.3 MHz +/- 200KHz
10.4 MHz +/- 100KHz
12.1 MHz +/- 200KHz

These frequencies fall statistically within the same area as that found in earlier circuits using similar cores and coils.

The followingg material resonance points are being noted for Barium and Iron for 1 Tesla.

$^{135}$Ba 4.2581 v/MHz
$^{137}$Ba 4.7633 v/MHz
$^{57}$Fe 1.3815 v/MHz

The direction of the windings by L3 over the top of L2 is critical. Wind L3 in the same sense as L2. Place L3 in the center of L2 and insure on multiple coils that the windings are as consistantly the same as possible. Not following this procedure will result in coils displaying resonant peaks at slightly different points, which is detrimental to the circuits operation.

**Single Coil Replications, construction details.**

1) The wire coil that is received (from vendor) with the core must have the coil secured to the center of the core. The core and coil must be as described in Part#1 it does not meet known specifications; operability for this work is therefore unknown. Secure carefully with a narrow strip of plastic electrical or paper tape. Place tape on both ends of the coil to the core. Be careful not to deform the coil.

2) Carefully place a single layer of tape over the wires of the coil. Do not use more than a single layer of tape. Do not pull the tape tightly as it will deform the coil and may alter the placement of the turns.

3) With correct wire size (see parts list), very carefully wrap a 9 turn coil in the center of the secondary. To start, secure one end on the core with a narrow strip of tape making a 1/2 turn to the center. Wrap the 9 full loops. Insure you do not pull the wire to tight. If you wrap the turns to tight it will dig into the secondary and alter or damage the underlying wire. The turns must be close wrapped. Insure that when finished you can not see the tape below. *Note: The coil must be wrapped in the same clockwise or counter clockwise direction as the supplied antenna coil. Wrapping in the opposing direction will result in the circuit not working or working incorrectly.

4) With a 1/2 turn route the wire to the finished end of the core. Secure with tape in a similar way used in starting.

5) Do not cut the secondary wires (the actual antenna coil) and insure by trimming that the primary ends do not exceed 1.5" in length.

6) It is desired that a proto-board similar to the JameCo product be used for the experiments. Using any other construction method may prohibit the circuit from working. A smaller proto-board is acceptable, but clad circuit boards or soldered connection are at this point not known to work. The board connection capacitance appears to play an important part at this stage of experimentation.

7) With the coils now wired, use a bit of double sticky tape and secure the coil and core in the center of your board. Select either end of the primary and clean the enamel coating off and punch it into one of the board contact groups. Place one lead of the choke in this contact group. From other end of the choke and its contact group connect one end of a 50 ohm composite carbon resistor. This resistor value may vary depending on the output impedance of your generator. Insure you select the proper value.

8) In the same contact group place one lead of a 400pf mica or ceramic capacitor. The Hi generator output lead is connected to the free end of the capacitor. The ground of the generator is connected to the free end of the generator termination resistor. See the circuit diagram at the top of the page.

9) Using the free secondary wire on the opposite end of the generator input primary lead; connect it to a contact group. Construct the rectifier section with either 1N914's or 1N4148's. Connect a White LED across the output of the rectifiers. *Note: The following diodes will not work, 1N4001 - 1N4007 or any other standard power diode. The only diodes known at this time to work are indicated in the instructions.

10) You can now check your coil for resonate peaks and overall response and activity. Start with a generator output of at least 5 volts Peak-to-Peak Sine wave signal. Work through the frequencies and see how the peaks compare to those in this document. The LED is the indicator of choice; it will light brightly at the peaks.

11) Once you have found and recorded the peaks, reduce the generator output when tuned to the highest peak, until you see the LED begin to dim in response.

12) With your neon bulb you can now explore for the high voltage peaks. Find and record.

Only one peak has been found where the high voltage and maximum LED intensity are in sync. The location of each will be important as we move forward in design.

Before moving forward the experimenter should spend significant time with this circuit as it is necessary its operation be understood before moving on.

**Frequency Measurement**

During the assessment of any of the coil arrangements it must be understood that many factors affect the final and desired test readings. First comes the accuracy of the measurement equipment. If using an oscilloscope that is not of the highest quality and under computer control, the human factor determines the accuracy of the resulting measurements. Only when a trace is fully expanded for Cursor setting will the most accurate result be obtained.

When examining frequency with a frequency counter, time base accuracy is the primary factor in obtaining accurate readings. There are various combinations DVM+FC+LCR meters on the market and in most cases the frequency counter limit is capped at or below 15MHz with accuracy degrading at the upper limit. It is not recommended that this type of equipment be depended upon to obtain accurate readings. The base line counter should have a minimum time base accuracy 0.001% at 100Mhz; this is the minimum that should ever be used.

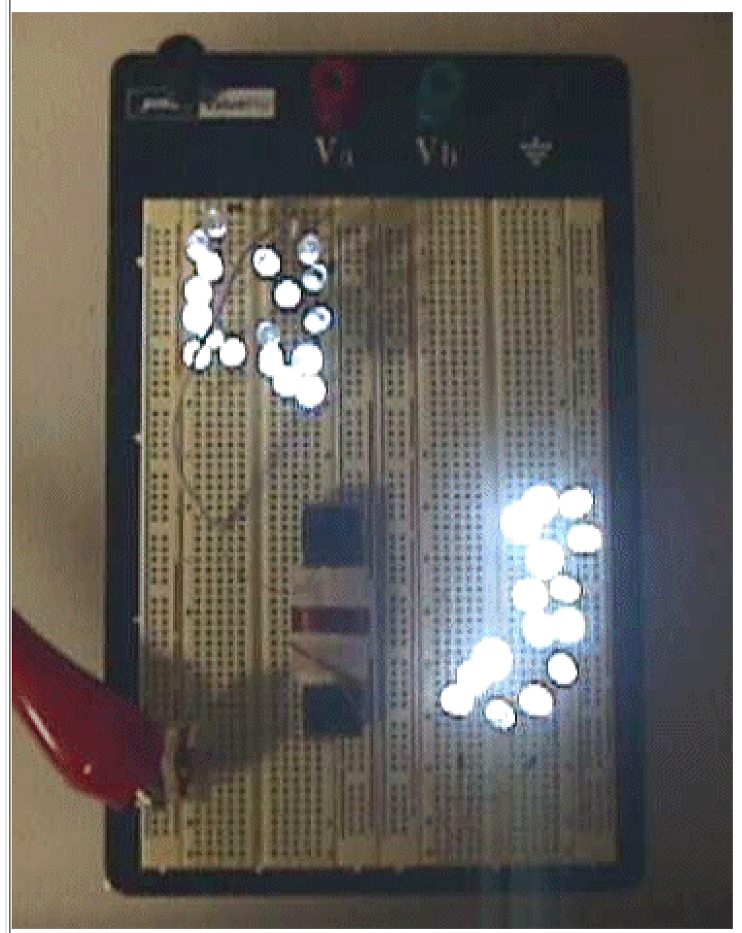
During frequency measurement it will be observed that there is instability in the readings, a shifting of both up and down in the result. This shifting or 'Hunting' is an artifact of the circuit itself combined with any drift in the signal generator. The signal generator if from the medium to high end and under digital control can in most case be ruled out as a contributor to the observed 'Hunting' affect.

***If you are going to move on into multiple coils and large numbers of driven LEDS you must build all coils to be used and following the preceding procedures to insure they all work and tune in exact detail. Two coils, each with a different maximum response peak will degrade the overall operation and may cause the circuit to not work at all. Do not assume you will solve the problem later. Match the coils now or look forward to multi-coil failure.***

**Solving an unknown Double Wing circuit problem.**

The following image is taken from a single coil with each end of the secondary connected and driving a group of LEDS. For some yet to be determined reason, the peak brightness for each group is not the same. In fact the bottom group shows a much brighter display.

**Fig: 16**



In an attempt to determine the reason, the circuit was connected to a signal generator and swept. It appears that the resonant peaks are identical, yet the upper end of the coil does not produce the same light, even when driven from the generator.

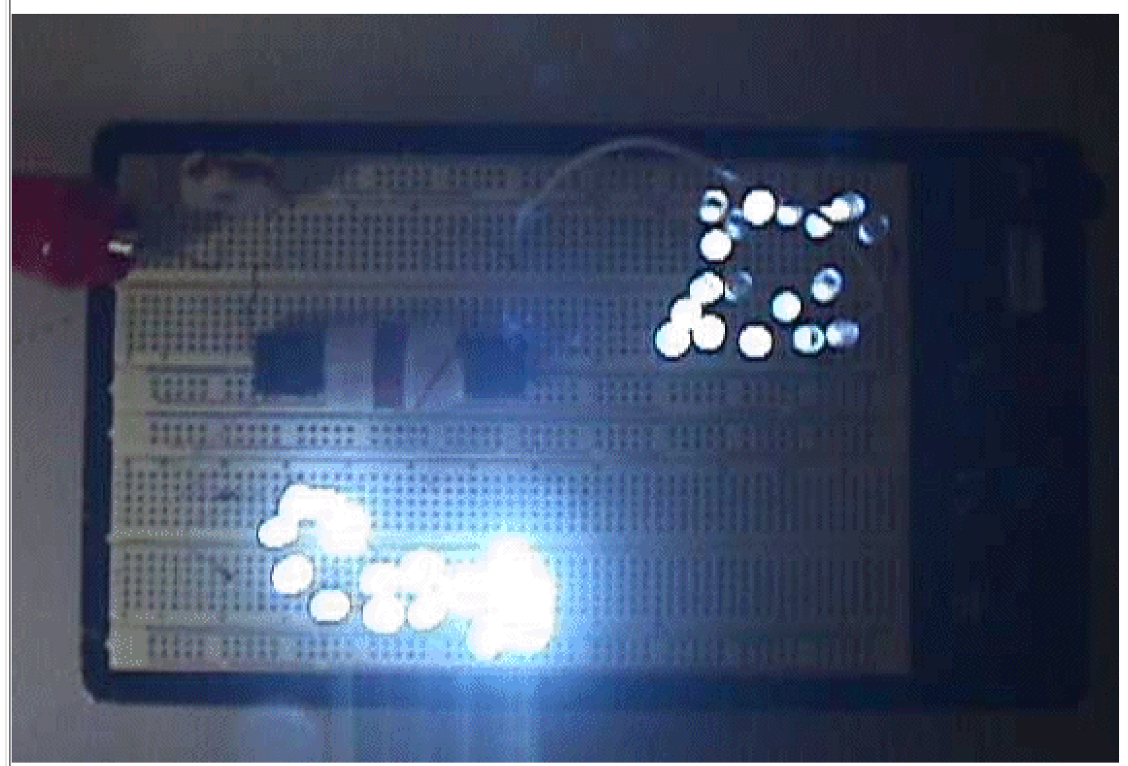
When generator driven and the peak for the lower group is found, removal of L1 cause the upper groups output to drop further and significantly, to the point that some are just barely radiating.

Orientation of the board to the four cardinal points did not result in noticeable change. Reinstalling L1 and changing its orientation in relation to L2/L3 also did not result in noticeable change.

Because the group of LEDS that are dimmer are connected to the secondary end of the coil that has the open primary wire, another L1 was added to this free end. The effect was a dimmer group. The added inductance on the free end of the primary is not desired.

Next step was to switch L2/L3 end for end. The results were startling and the dimmer group were almost extinguished. Some LEDS were so low in output that they could not be seen in ambient light.

**Fig: 17**



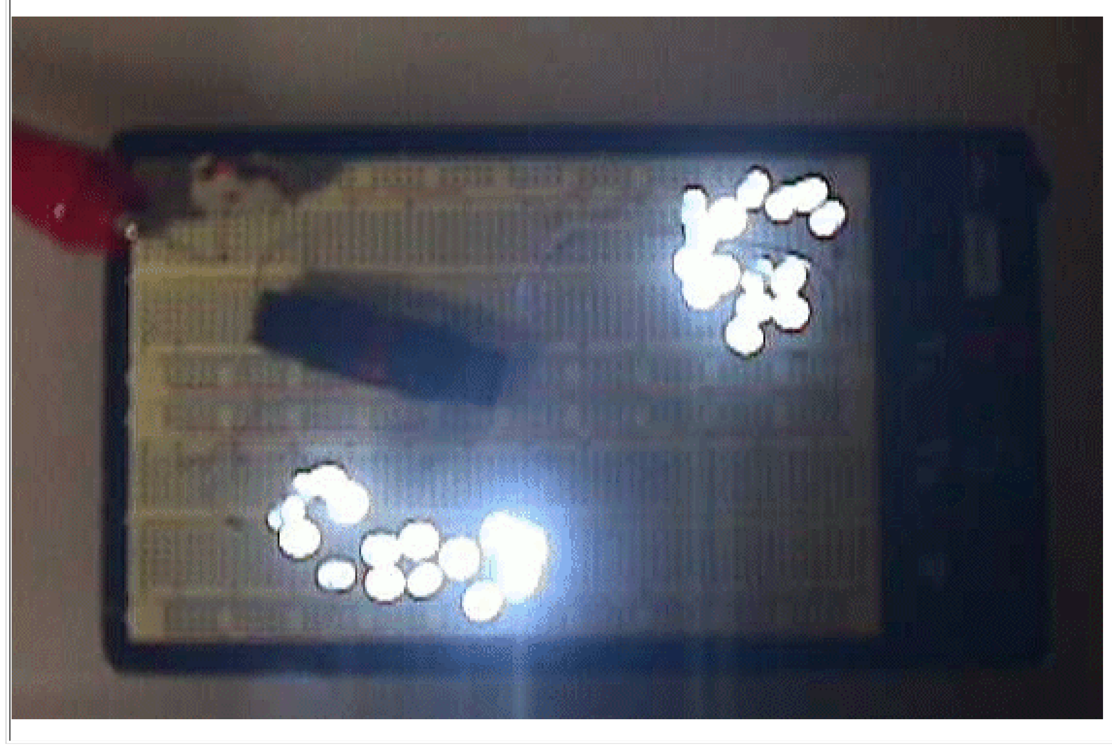
The final attempt to attach the reason to the coils was to leave the coil in its physical position and switch the bright secondary lead over to the dome group and vise versa. Much to my suprise the conditions remained the same. The bright group remaind very bright and the dim group became even dimmer.

Three possible tests remained to either identify the rectifiers, the LEDS or the board itself as the cause. The rectifiers were exchanges one at a time between the groups. No difference was observed.

A new batch of LEDS were added one at a time. The bright group contained 15 LEDS and brightness could only be obtained in the dimmer group up to 12 LEDS. When the new LEDS were added their placement on the board was also altered to insure a different coupling effect and capacity to the backing plate.

Last resort, the coil and core was switched. Success, both ends of the double wing supported 15 LEDS at very similar intensity.

**Fig: 18**



**Coil specifications for the coil presenting imbalance;**

Test lead resistance to be offset in readings = 0.4 ohm

Primary 0.5 ohms - 0.4 ohms = 0.1 ohms actual
Secondary 10.7 ohms - 0.4 ohms = 10.3 ohms actual

Capacity offset due to test leads = 0.15nF, dielectric between coils is paper tape.

Primary to Secondary = 0.40nF - 0.15nF = 0.25nF = 250pF

Inductance (on core) of Primary and Secondary

Primary 1.4uH
Secondary 719uH

**Coil specifications for the coil properly working;**

Test lead resistance to be offset in readings = 0.4 ohm

Primary 0.5 ohms - 0.4 ohms = 0.1 ohms actual
Secondary 10.6 ohms - 0.4 ohms = 10.2 ohms actual

Capacity offset due to test leads = 0.15nF, dielectric between coils is plastic electrical tape.

Primary to Secondary = 0.35nF - 0.15nF = 0.20nF = 200pF

Inductance (on core) of Primary and Secondary

Primary -0.5uH
Secondary 720uH

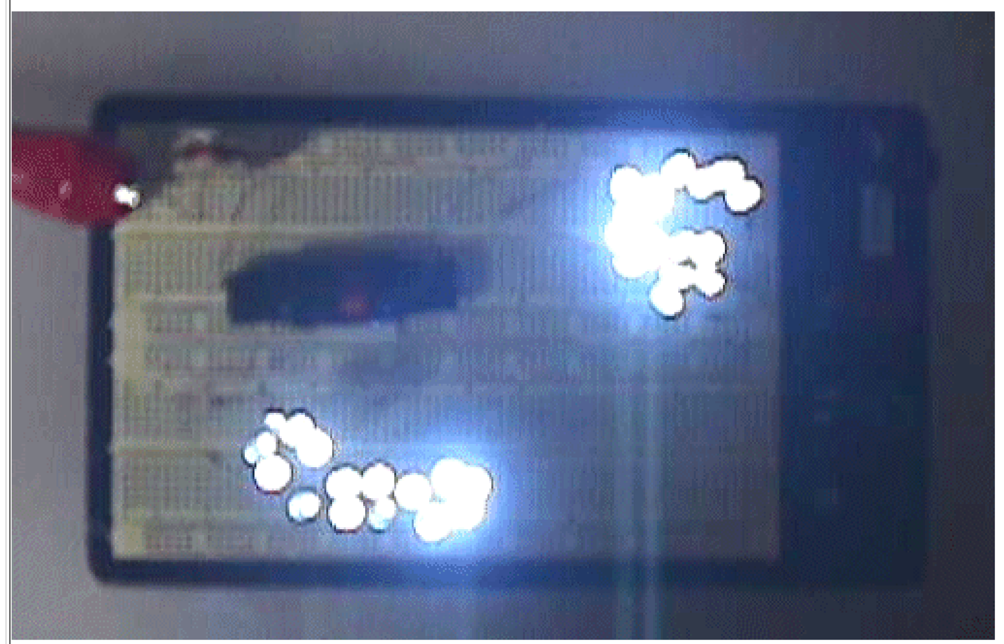
The working coil is causing the Elenco LCR-1810 to see the primary and display some odd negative inductance. No matter how the reading is taken the reading remains negative. One can only assume it is reading in error, but why and why on the coil that works?

Because this coil was constructed early in the research and used a different type of tape between the coils, it was decided to disassemble and examine it. Once disassembled it was determined that from a left to right position, the secondary was wrapped counter clockwise and the primary was wrapped clockwise. This prompted that the working coil to be partially disassembled.

It was found that the working coil was wound in the same clockwise direction as the secondary. I reconstructed the disassembled coil using plastic electrical tape and winding the primary in the same clockwise direction as the secondary.

Measurement of the primary inductance now displayed correctly and was the same as that of the other working coil. Connecting the coil in the circuit resulted in 30 LEDS being driven to full brightness in groups of 15 each off of each secondary lead.

**Fig: 19**



With the double wing setup we have stopped adding LEDS at 75 per side. Although we can now confirm that when the double wing is driven from a 10MHz 7.5-volt peak-to-peak signal and capacity coupled as shown below, there is no observable increase in power being used by the generator as LEDS are added.

Because direct power measurements are difficult, we can use the specifications for the LEDS to obtain an idea of the power consumed. For a 30 LED system with matched LEDS having a forward voltage drop of 3.8V @ 20mA we obtain 30 x 3.8 x 2E-2 = 2.28 Watts.

In a similar manor the 2x75 Double Wing would consume 150 x 3.8 x 2E-2 = 11.4 Watts.

In this driven test the signal generator has a maximum current output of 150mA with a voltage of 7.5 volts peak-to-peak. The signal generator output is a complimentry pair driver (similar to older discreat transistor driven) audio amplifiers. The output from the drivers is through two 100 ohm 2 watt carbon resistors. The supply voltage to the drives is +15 and -15 volts.

Using the factory specifications for maximum voltage and current output we can calculate what should be the maximum peak power output of the generator.

$P_{gen(max)}$ = 7.5 x 0.150 = 1.125 Watts

If in a sample case where a LED has a forward voltage drop of 3.8 volts for a current of 20mA we can show that;

$P_{LED}$ = 3.8 x 2E-2 = 7.6E-2 or 76mW

How many LEDS would have to be driven before the output power of the generator would be exceeded;

$Max_{LEDS}$ = 1.125 / 7.6E-2 = 14.8 LEDS or (15), or 7 each side.

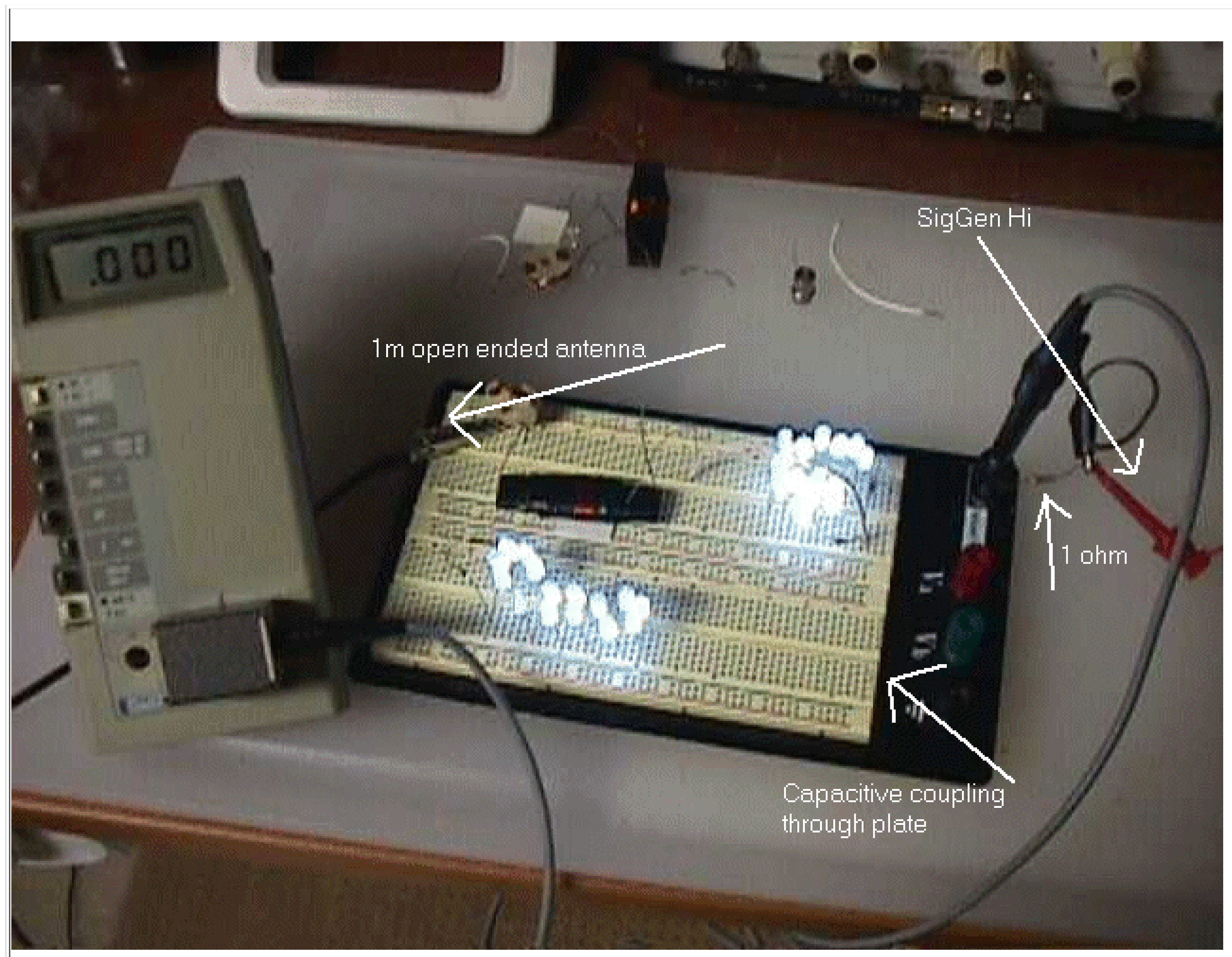
**Validation of Calculation**

**Fig: 20**

The preceding photo shows a Double Wing circuit powering 15 LEDS per secondary leg. Measurement of RF across a 1 ohm carbon resistor to service ground (ground not neutral) using an RF probe with a calibrated bandwidth of 250MHz into a matching (DVM for which the probe was designed) Fluke Model 8022A DVM. As can be easily seen there is only a 1 millivolt of RF detected across the 1 ohm resistor. This would indicate a current of 1 milli-ampere from either ground to the circuit or the circuit to ground.

Connection of a signal generator by capacitive coupling from the base plate and removing the ground and replacing with a 1-meter antenna give unexpected result.

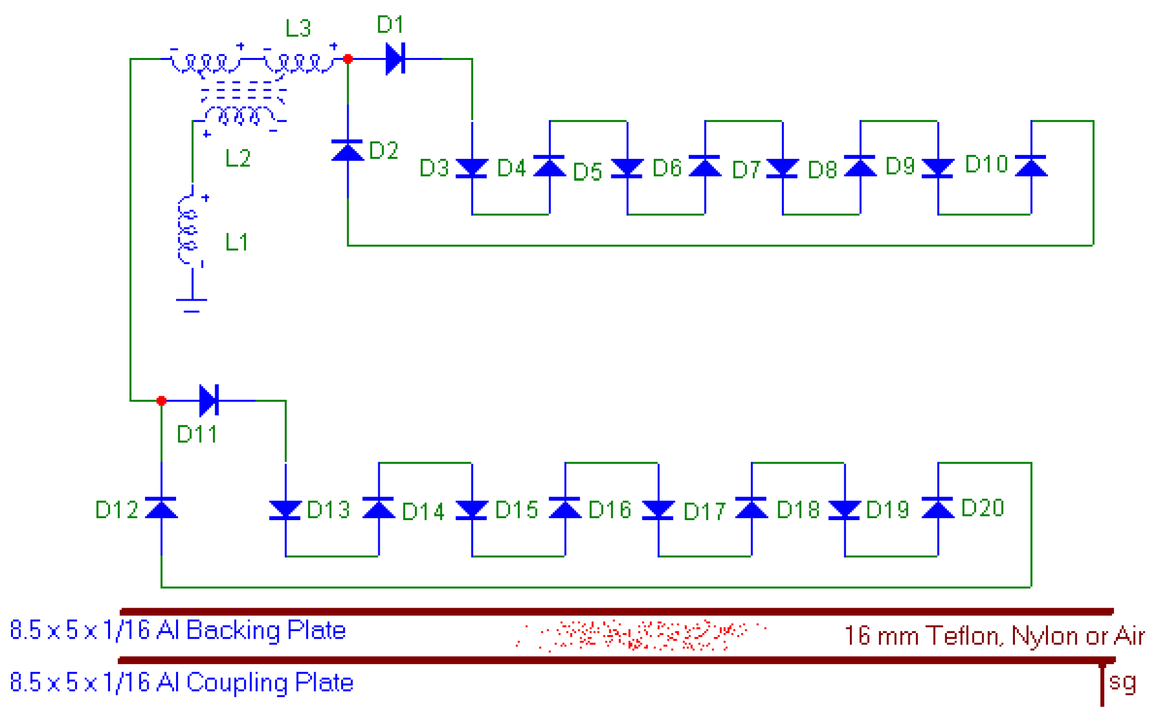
**Fig: 21**




The results would tend to indicate that when the generator is connected that no RF drop is present across the 1-ohm resistor. Because the ground wire was disconnected to remove a direct path for generator feedback and replaced with a 1-meter free wire, additional questions now arise on what is feeding the circuit and how to make and observe accurate measurement of any external power source.

**Fig: 22**

The double wing circuit and coupling used in the testing of the configuration and determination of coil differences. This setup is required in order the signal generator to be loosely coupled to the circuit. DO NOT use any type of direct signal coupling or power gain anomalies will not be recognized. It is important that the separation of backing plates be no closer than indicated in the following image.




The above coupling method depending on the dielectric used presents ~31pF.
Xc @ 10MHz = 1/OmegaC = 5.134E-1

**A note on LEDS.**

Unless you purchase LEDS matched for voltage drop, they can vary somewhat and this variance will affect the brightness of the entire LED chain. In this research the LEDS were purchased unmatched and in a 1K quantity. The vendor accurately stated that the forward voltage could vary from a low of 3.4 volts to a high of 3.8 volts. This indeed was the case. In order for the entire chain to have near equal brightness, it is necessary that the voltage drops be matched. If this is not done you could in certain circumstances think you have problems that you do not have. Some of the LEDS appeared dim and the brought down the overall brightness of the series chain. I have not spent time on what is different with these LEDS, rather I match then for forward drop and this seems to remove many potential problems.

The following procedures cannot be performed with result until you have successfully completed all steps in "**Single Coil Replications, construction details."**

**Removal of Christmas Tree Effect.**

In video number six (6) the LEDS were made to alternately extinguish and re-emit, a flip-flopping of the operating LEDS. This is the primary example of the 'Christmas Tree Effect' or the mismatching of circuit parameters. In almost all case this is a result of coil or core differences, although to some degree care is required in core orientation and proximity to other cores.

It can not be assumed that testing a core coil arrangement one at a time will insure correct response when joined with others. Frequency measurement is difficult todepend upon because of the 'Hunting' or 'Drifting' nature of the systems.

1) With the proto-board, insure the aluminum backing plate is electrically floating and not connected to any of the contact groups of the board. If the board does not have rubber or plastic feet to raise it off the surface by at least 1/4" then add feet or rubber grommets to achieve this requirement.

2) Insure that none of your circuit under test has connection to any of the power buss rails. All connections must be to the short connection groups.

3) Place one of the coils and rectifiers near one corner of the board. Connect the rectifiers to one end of the secondary. Leave both primary leads free and rising straight up. Leave the other secondary lead free, do not connect it to even a free connection group. Connect a White LED to the rectifiers.

4) Place a aluminum plate the same size as the proto-board back plate underneath the proto board, separated by the rubber feet of the boards back plate. Connect the Hi lead from the signal generator to the free plate under the board. Do not use the generator ground lead and keep it away from the board. Connect an earth ground on the primary lead opposite the rectifier end.

5) Go through the entire set of you recorded response frequencies to see which ones remain and which one has assumed the maximum.

6) Now you must sweep the coil from just under 1MHz to 15MHz. Use a slow sweep rate and watch the LED. Record any additional high output peaks.

7) Set the frequency generator to the frequency that provides the best output in LED intensity. *Note: a volt or current meter can not be used. A light meter works very well with a black tube over the LED.

8) With the generator frequency set to the maximum response point, reduce the generator output level to where the LED just begins to indicate the decrease. Leave the generator in place and start adding additional LEDS in series. Once you have about ten LEDS you can place and test the next coil.

**Measuring Output Power**

Because the output section, rectifiers and LEDS are at high impedance, it has proven difficult to attach anything to the circuit that would allow for even near reliable measurement. In most cases the output will be reduced or stopped and measurement is meaningless. It was necessary to come up with a way that could be performed without affecting the actual circuit.

This is done by using the relative light output of the LEDS. A light tube to shield from external light was placed over a selected LED in an operation circuit. The light level was recorded. The same LED was removed from the circuit and placed on a circuit board in series with a 1K resistor. The light tube was placed over the LED and the voltage to the LED was adjusted until the level matched that recorder in the circuit when in operation. The voltage and current was recorded.

To arrive at a relative circuit power the following was used;

$P_{Out} = P_{test} \times nLEDS$

**Fig: 23**

To measure the light from the LED you can use a professional light meter or simply a CdS cell and ohmmeter. The detector bandwidth is of little importance as you are just going to match levels in order to obtain a voltage and current to the LED under test.


**Fig: 24**

**The simple but effective test setup.**

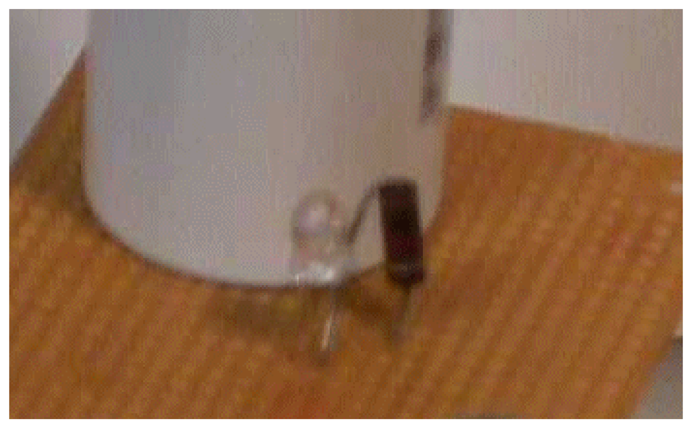
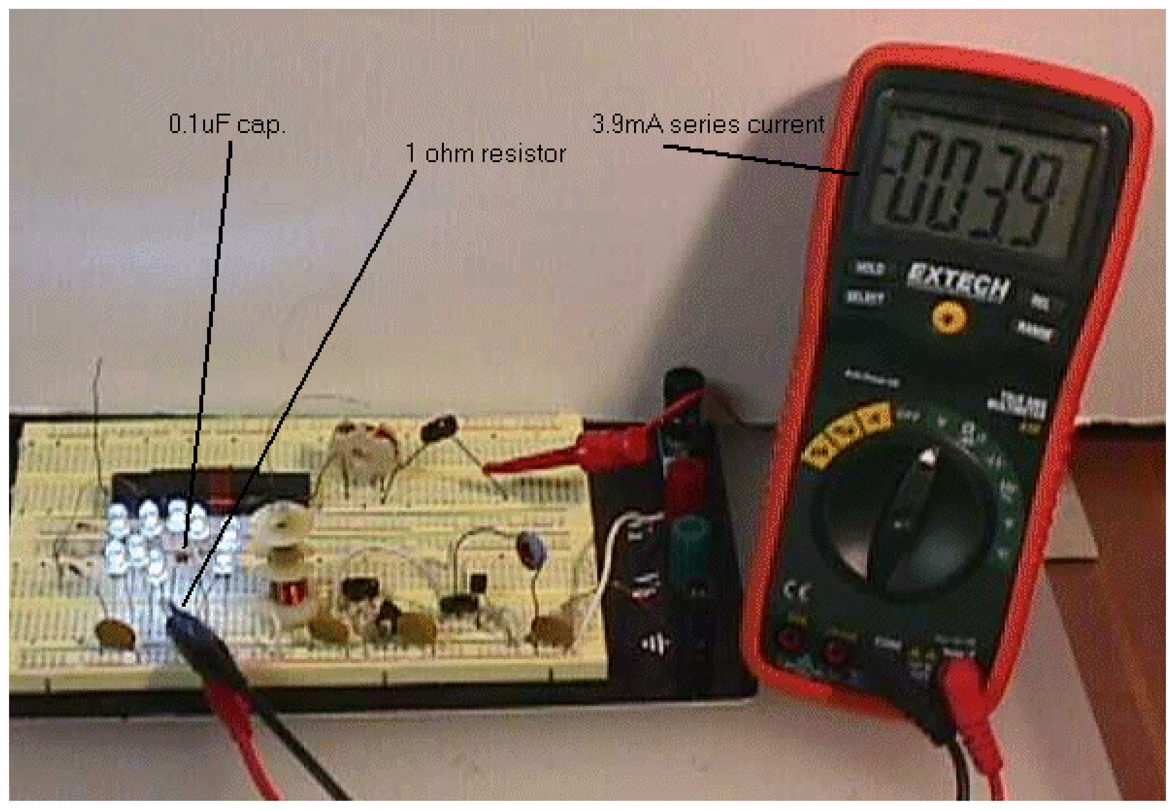


**Fig: 24a**

**10/25/2007**

**New Measurements**




Because the LEDS are in series I wondered if it would be possible to place a measurement resistor in the middle of the series chain an not affect the impedance to where the output degraded. It may indeed have worked, although the results are very surprising.

The measurement was performed by inserting a 1 ohm composite carbon resistor between the 10 LEDS, five LEDS on each side of the resistor. Because of the rectifiers and the LEDS themselves being rectifires, I placed a 0.1uF capacitor across the resistor. When the meter was connected only a very small brightness reduction was noticed.

The reading was 3.9mA or a 3.9mV drop across the resistor. A calculation of power with this current would then be;

$P_{Out}$ = 10 x 3.8 x 0.0039 = 0.148 W or 148 mW for the ten LEDS.

It is obvious that the light output comparison method is in error or this method is in error. The difference is significant;

Comparison method;

$P_{Out}$ = 10 x 3.8 x 0.02 = 0.760 W or 760 mW

A difference of 760 - 148 = 612 mW

**Temperature Measurement of LED Heat**

**Fig: 25**

LED Heat production was tested using the simple single coil circuit as shown in multiple images and described above. Ten LEDS were grouped together and enclosed by placing a Styrofoam tube around them and wrapping the tube in insulation wrap. A digital thermometer was used that reads to 0.1'C and has an accuracy of +/- 0.1'C. The ambient temperature was measured with a digital thermometer calibrated to NIST Standard Reference.

The test chamber was allowed to equalize with the ambient temperature. As seen in the photo the start of the first test shows the test chamber device at 24.7'C and the ambient at 24.6'C.

The first test was run for one hour.

Results of 1 hour run;

LED test chamber 23.0'C --- Ambient 24.5'C

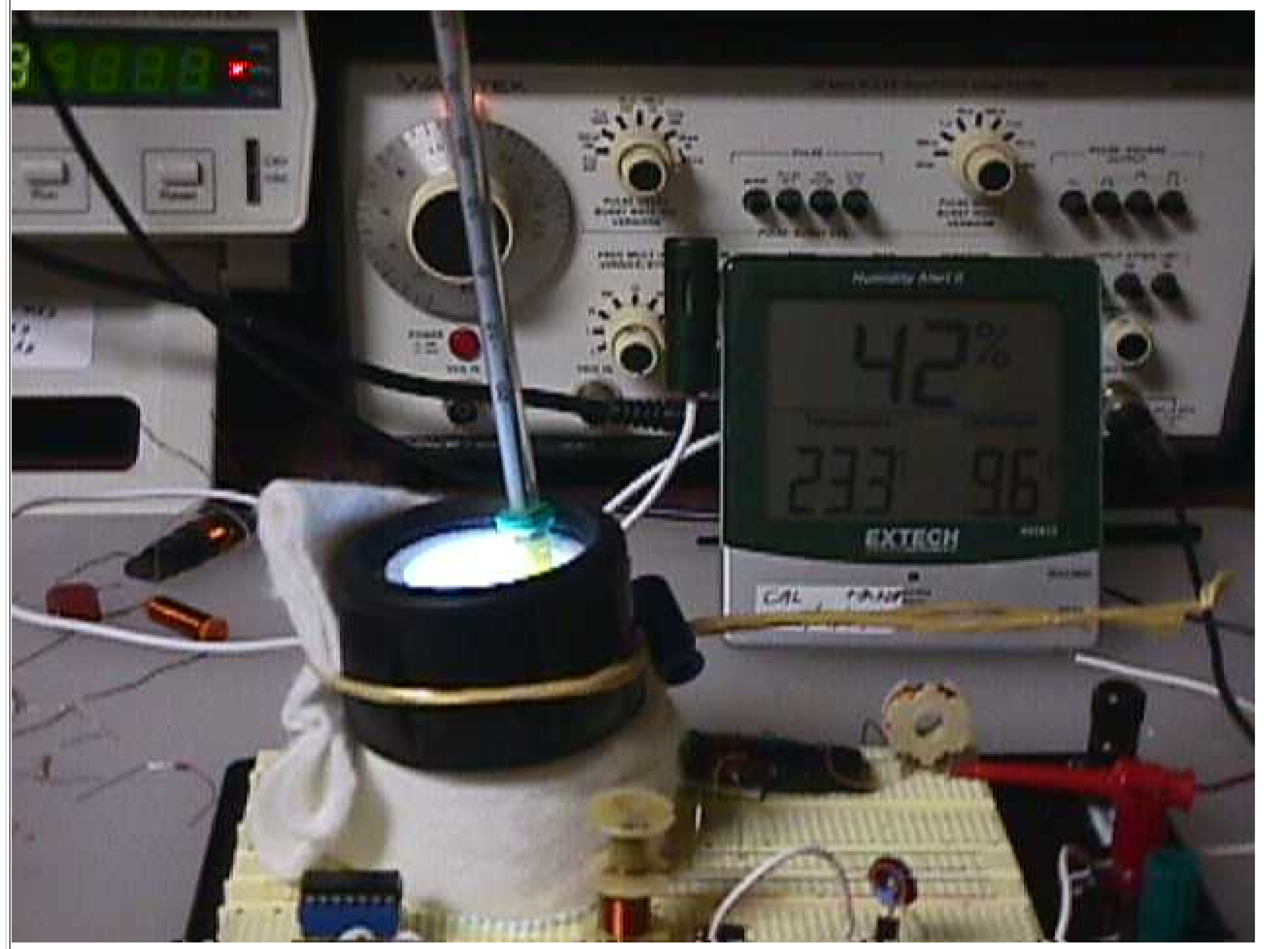
The results of the first test were interesting and it was decided to run another test for a longer period of time. The second test was setup in the same was as the first and lasted for four hours. At the end of the four hours the readings were;

Results of 4 hour run;

LED test chamber 24.0'C --- Ambient 23.8'C

**Looking Closer Into Possible Cooling**

**Fig: 25a**

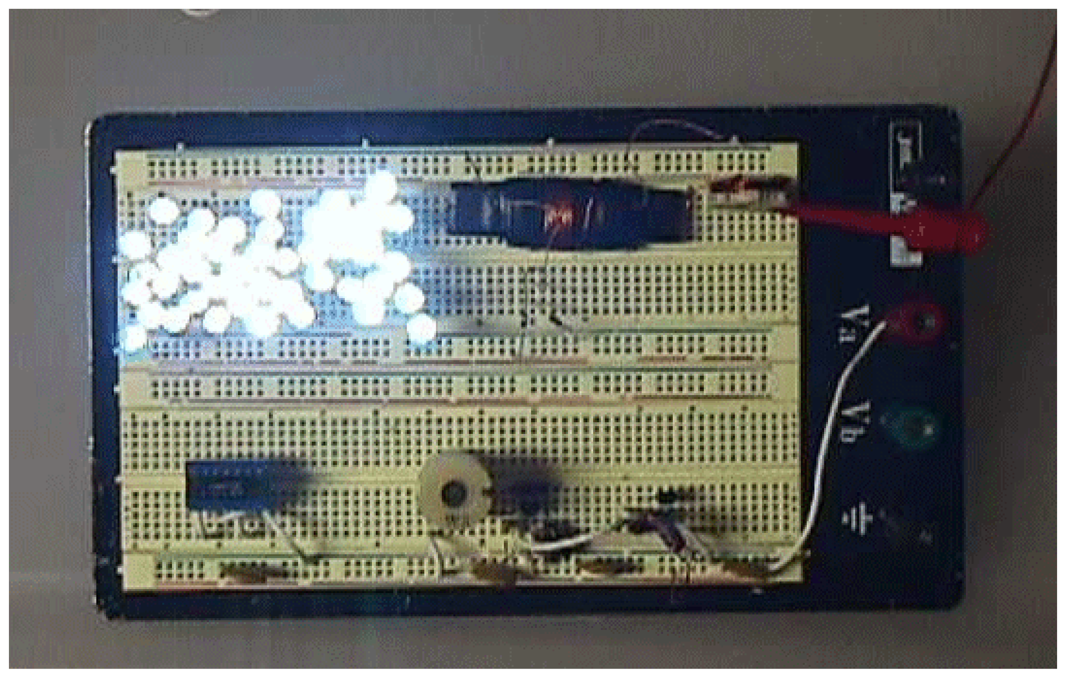



A presented hypothesis surrounding the LED cooling, proposes that if the emitted Light (Photons) are allowed to escape the measurement chamber that a clearer picture of the temperature drop should be observed.

The measurement vessel was modified by placement of a glass lens over its top through which was placed a lab thermometer. The unit was run for several hours during which measurements were recorded.

After analysis of test results it appears that the LEDS are indeed cooling although the amount realized in the extended test did not indicate the magnitude of cooling expected. Therefore the hypothesis holds with the exception that it may require modification as to the expected results or the crude measurement protocol needs significant refinement.

**Fig: 26**



**Cutting Power Requirements for Portable Lights**

**27 Hours, dropped out of oscillation**

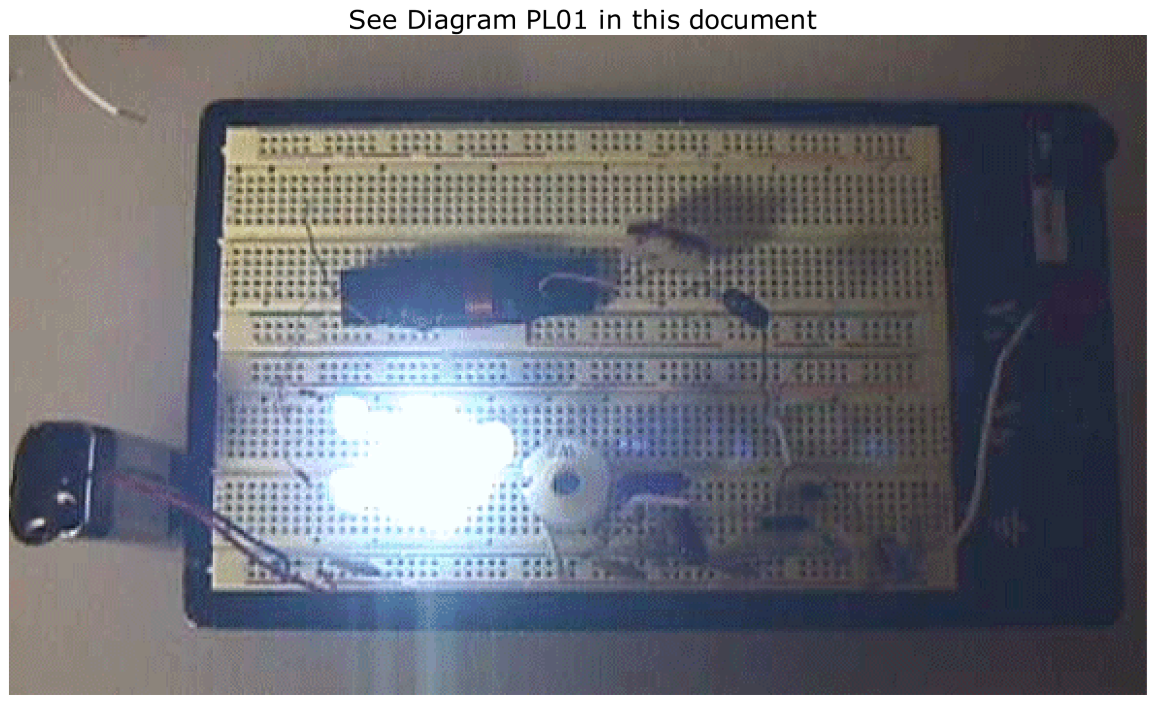
Started 1630CDT 10/23/07
Energizer X22, when New is 9V and is specified to have a capacity of 655 mAh* Energizer Spec. of 655 mAh is based on; '*Typical capacity rating based on 25mA continuous current drain to the 0.8 volt cutoff per cell.' *Experiment was started with a battery measuring 7.45 volts.*

*10 White LEDS with matched $f_v$ of 3.8V @ 21mA.* $P_{LEDS} = 10 \times 3.8 \times 0.021 = 0.798$
$R_{LEDS} = 38/0.021 = 1809.5$ *ohms*

**Fig: 27**

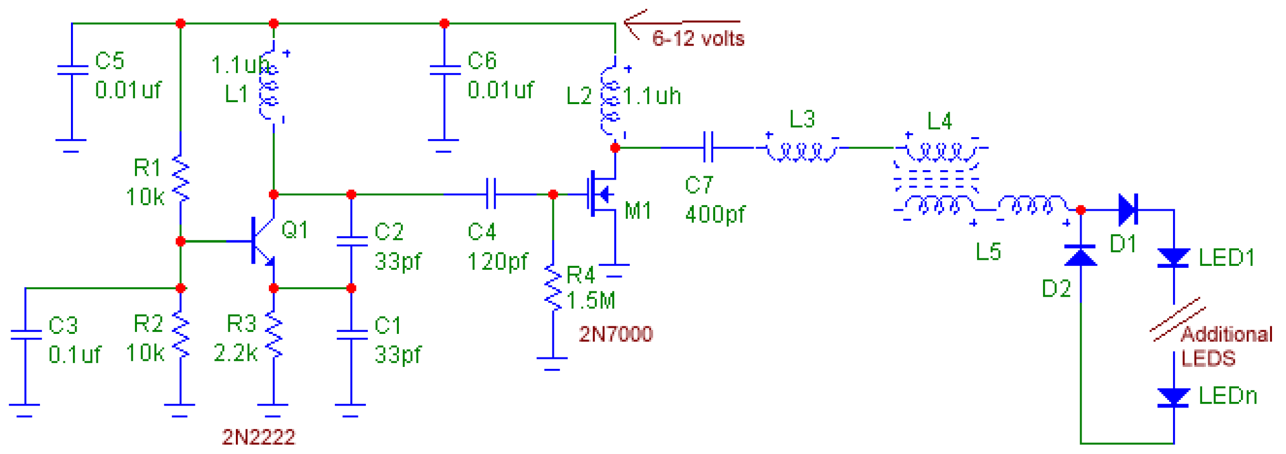
*1727CDT 10/24/07 Voltage = 4.35 Final*

See Diagram PL01 in this document



**Interesting Portable Light Design**

**Fig: PL01**

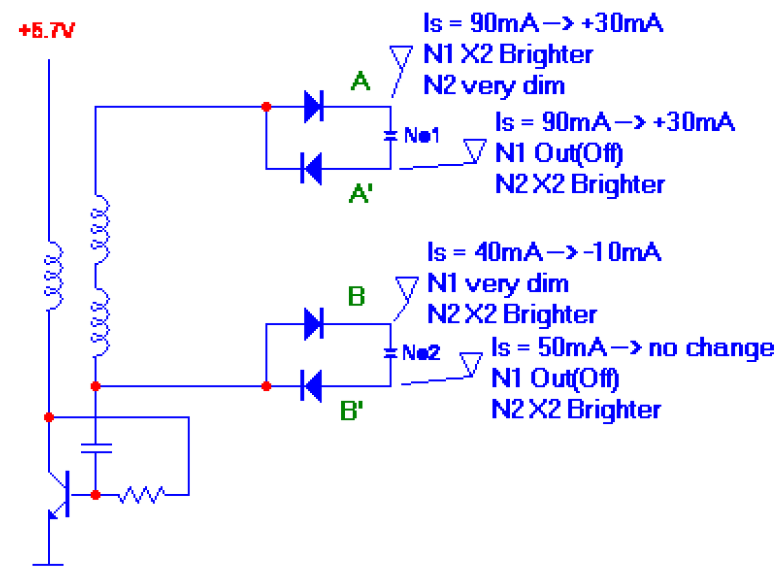


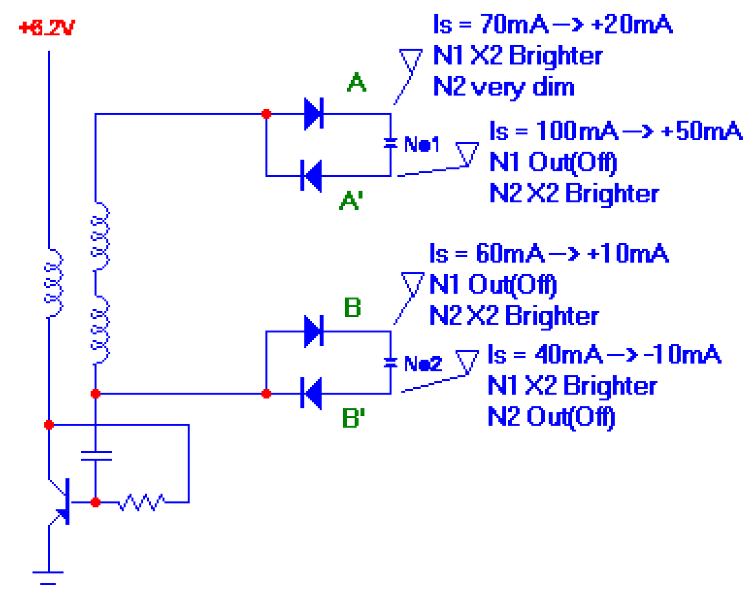

*Notes on preceding circuit.

Capacitor C7 is shown as 400pf, this capacitor in many cases can be reduced and not affect overall results. It is not advised that the value be decreased below 82pF.

Transistor Q1 is shown as a 2N2222, although a 2N3904 which is rated to 300MHz may work better if available.

**Measurements on Two Thomas Oscillator Circuits**




Two different circuits were looked at, the only difference was that one used a NPN transistor and the other used a PNP. Both transistors were matched as closely as possible for hfe and bandwidth. The purpose of the experiment was to explore what effect would be observed when an 85cm test lead was connected to different positions on the AV Plug.

The results proved to be very interesting and showed a significant difference between the NPN and PNP transistors when all other parameters remained the same. The following is the same data seen in the preceding image, but uses coloring to better understand the results.

One AV Plug was placed normally at the free end of the secondary while the second AV Plug was placed on the opposite end of the secondary where the feedback capacitor to the transistor base is coupled. Two Neon bulbs were used for Plug loads, each Neon fired at approximately 95V and drew 1.8mA.

***Note the Neon's are labeled N1 and N2 for reference.***

**NPN Test**

**Initial Source Current $I_s$ = 50ma**

| Point | N1 State | N2 State | $I_s$ |
|---|---|---|---|
| **A** | **Brighter** | **Dim** | 90mA / +30mA |
| **A'** | ***Out*** | **Brighter** | 90mA / +30mA |
| **B** | **Dim** | **Brighter** | 40mA / -10mA |
| **B'** | ***Out*** | **Brighter** | 50mA |

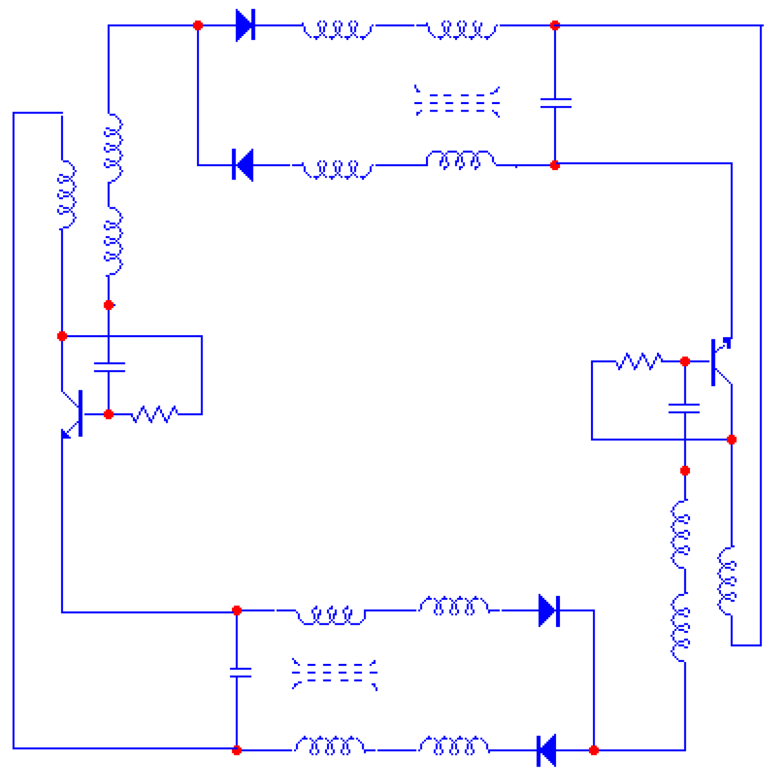
**PNP Test**

**Initial Source Current $I_s$ = 50ma**

| Point | N1 State | N2 State | $I_s$ |
|---|---|---|---|
| **A** | **Brighter** | **Dim** | 70mA / +20mA |
| **A'** | ***Out*** | **Brighter** | 100mA / +50mA |
| **B** | ***Out*** | **Brighter** | 60mA / +10mA |
| **B'** | **Brighter** | ***Out*** | 40mA / -10mA |

**Closing the Loop Attempt, a possible configuration**

**Fig: CL01**



It might be felt by a casual observer that closing the loop might be as simple as the above circuit indicates. Why should this not be correct if indeed the SEC circuits Cohere Energy from the Energy Lattice? Well the reason is simple, doing so forms a closed system and a closed system does obtain additional energy from the Energy Lattice, it is bound by the energy supplied by its power supply be that battery, or electrical outlet. Closed systems cannot Cohere Energy fro the Energy Lattice.

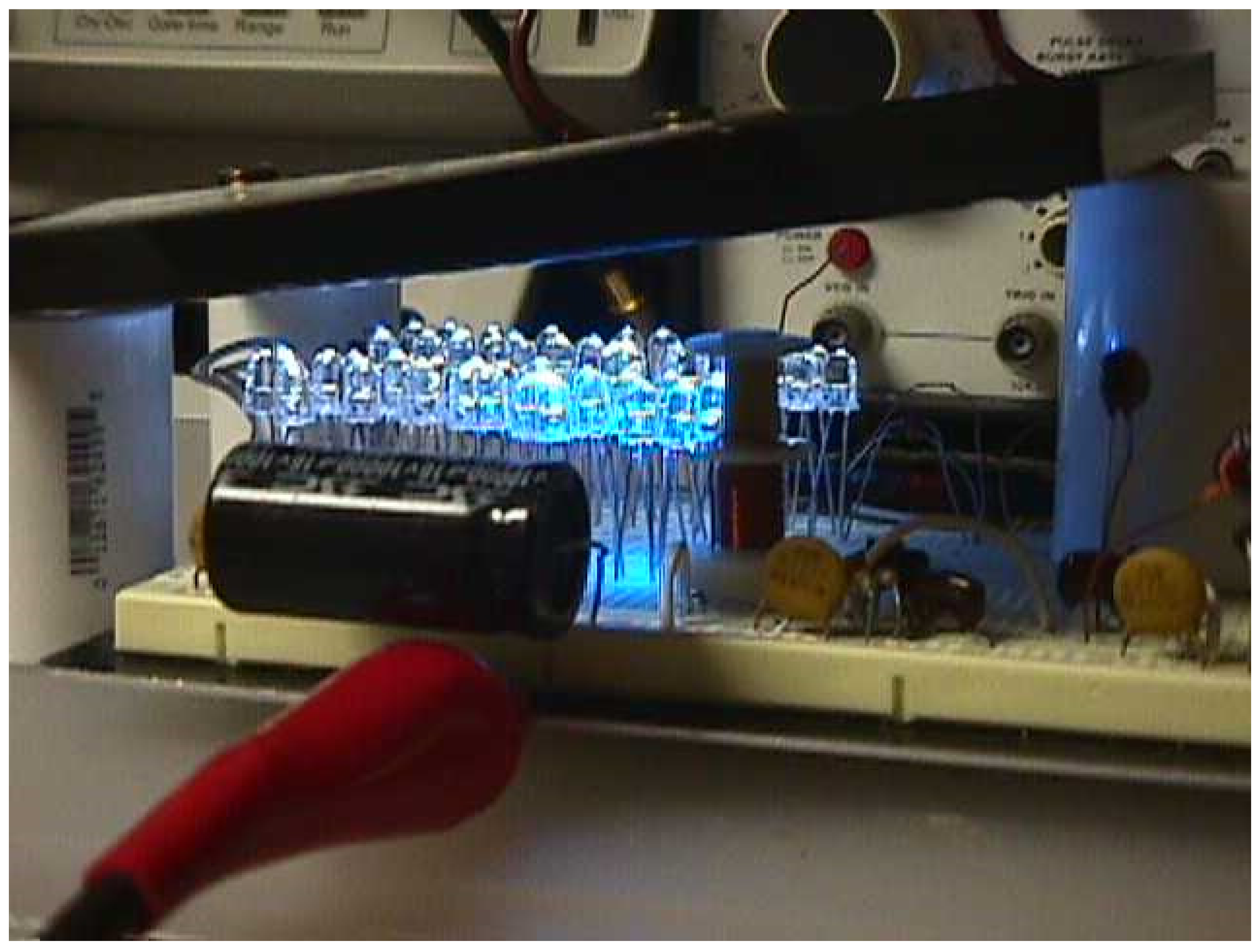
The circuit configuration shown in Fig: CL01 will work with a power supply powering one of the two segments, but power amplification will not result.

**The goal of this research is a 'Self Powering' or closed Energy Production System.**

**Fig: SP01**

The preceding picture is a side view of a multi-LED system driven by a single conversion coil, which is in turn driven by an onboard Colpitts oscillator into a MOSFET impedance matching driver. The oscillator frequency is controlled in a narrow range by a varied core inductor seen to the right of the storage capacitor.

**Fig: SP02**



The above photo is a better view of the large number of LEDS. A solar cell is directly above the LEDS. One of the initial problems in starting this approach was the light lost from the sides of the LEDS due to reflections in their plastic enclosures. The first of many solar cells proved to be less than efficient. The one shown above was made from film and was highly reflective as can be seen on the the proto-board directly below the LEDS.

First requirement in the quest for self powering is to obtain the most efficient solar cell available, in my final design I used two (2) 'Q-Cells SLP-003 Solar Panels 3 Watts each'. The cells each have an output voltage of 8.4 volts. The final design is powered at 16.8 volts.

**Fig: SP0x**

No localized external power source is used in the following two circuits. It is currently unknown how the circuit is being powered although it is speculated that excitation into oscillation mode is being supplied by the potential present in the earth ground connection. Except for an earth ground connection, no other connections are made. The aluminum pan in which the circuit is sitting is floating and not connected to the earth ground or the circuit or circuit board.

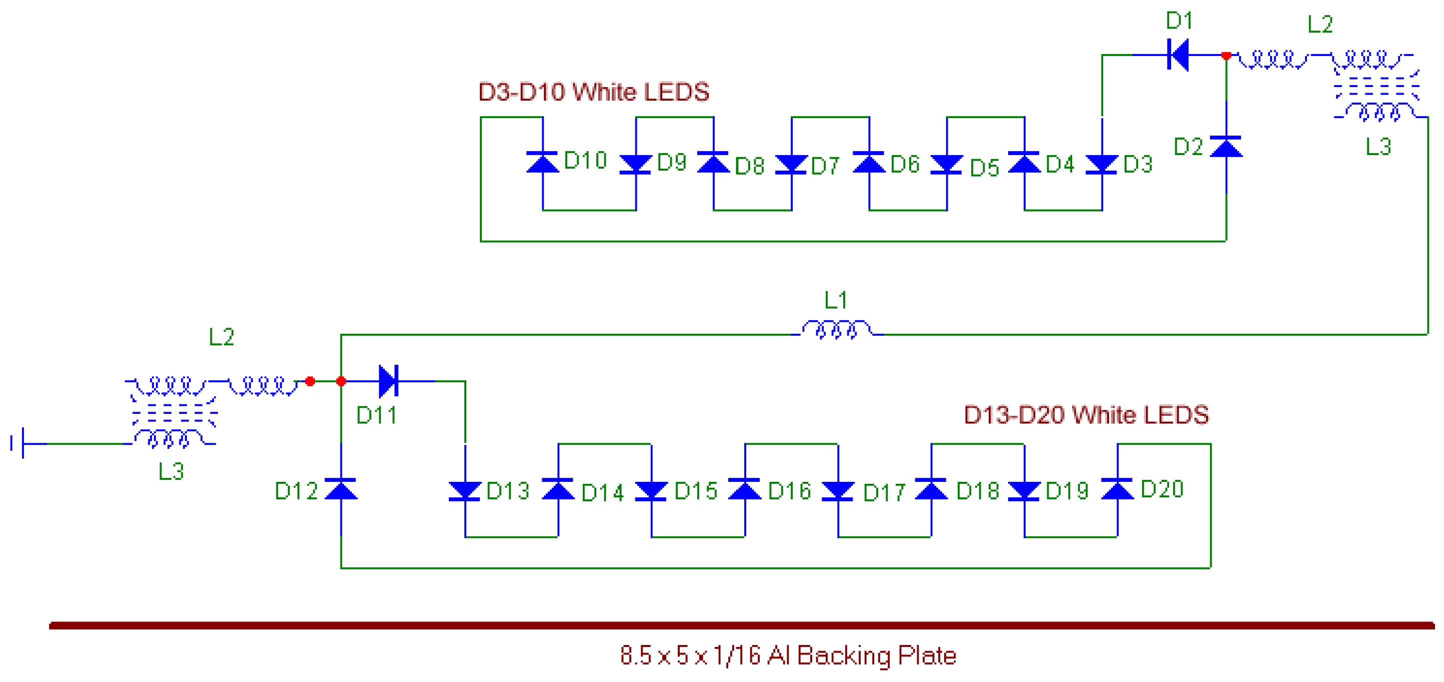



**Fig: SP0y**

When this circuit is actively powering the LEDS a very intense field exists around the circuit and abruptly ends at approximately a meter from the circuit. A radio receiver tuned to the emission from the circuit will no longer detect the radiation at the drop off point.

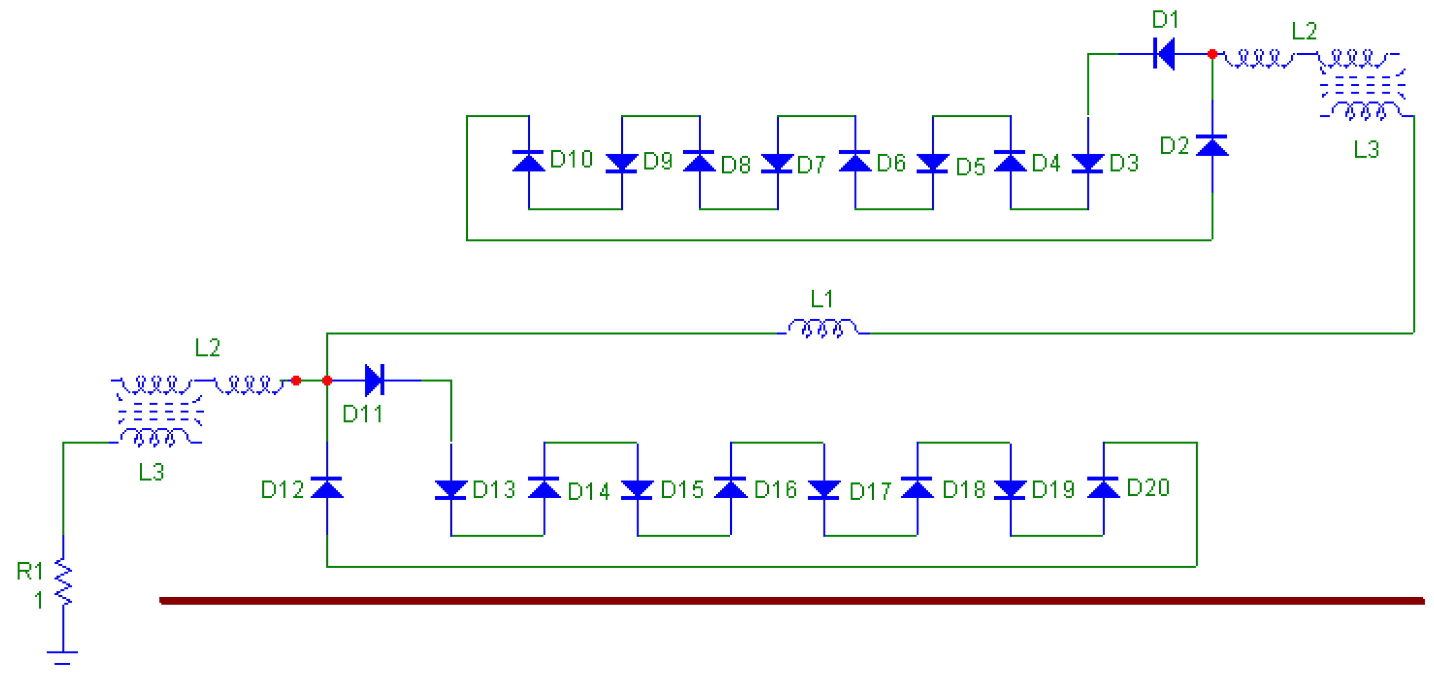
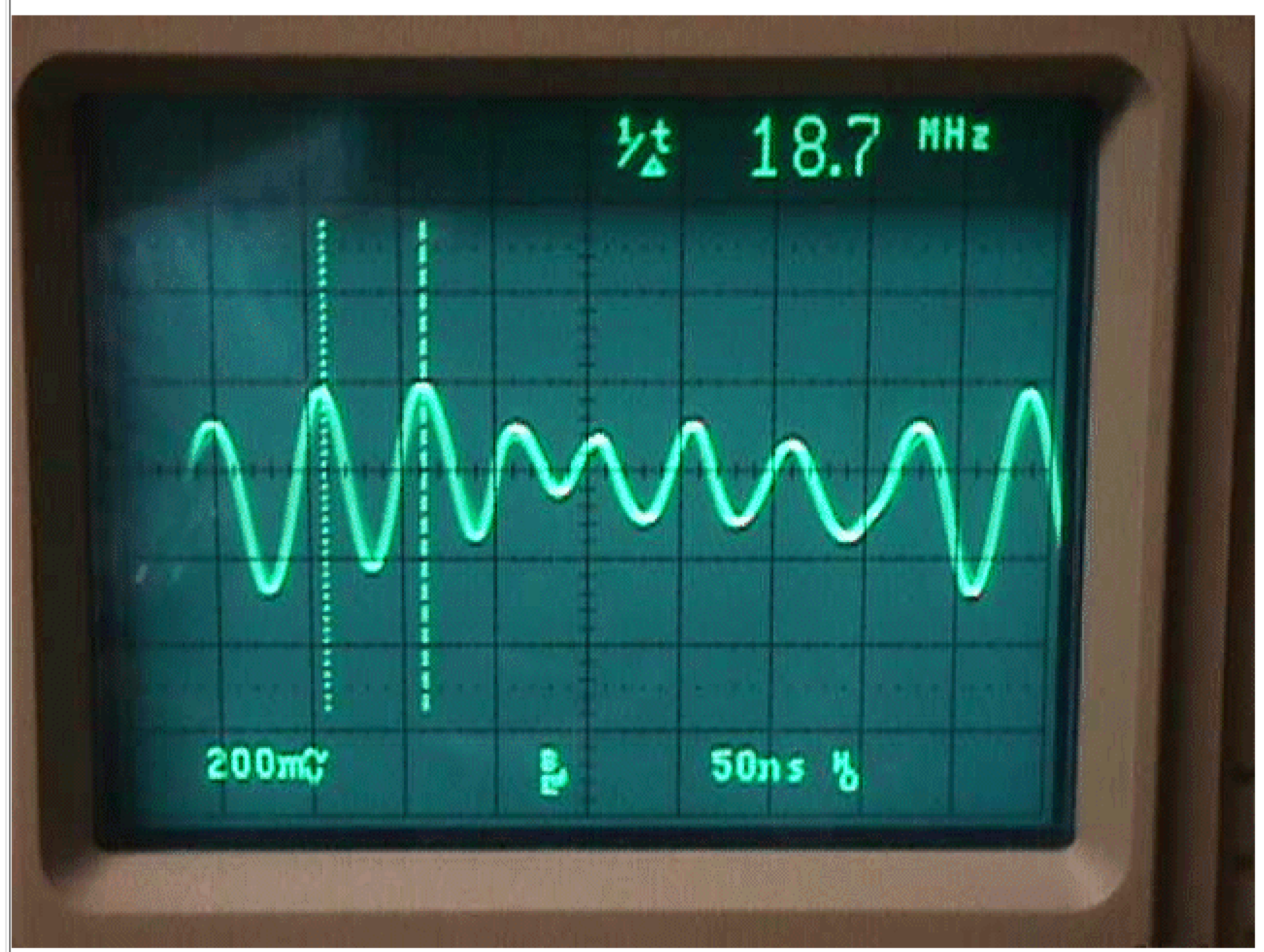



**Fig: SP03**

**Scope image of signal across R1**



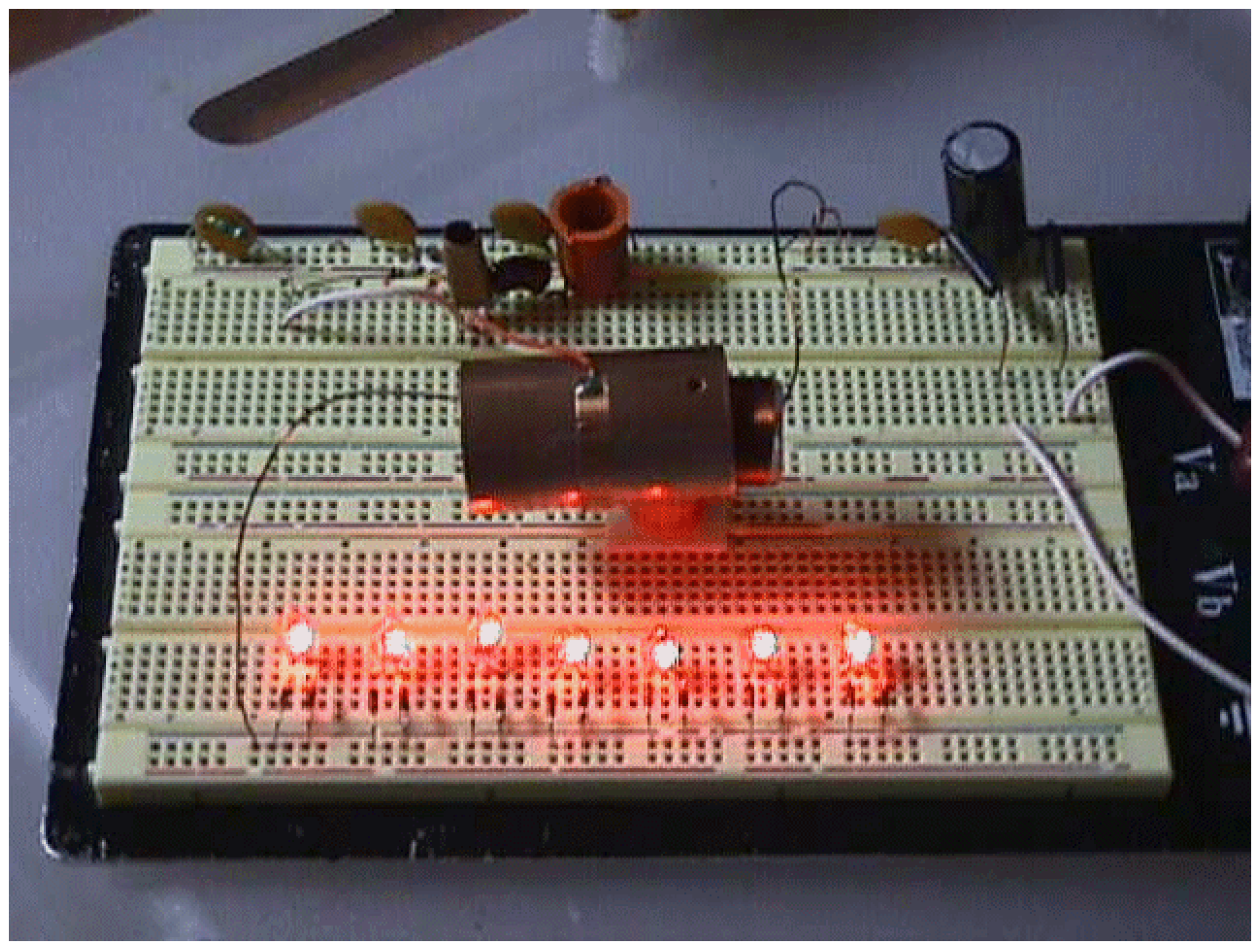

In the above scope image it is easily seen that there is a peak current to ground from the circuit of ~450mA maximum to minimum of of ~105mA. This is extraordinary current for a free-floating circuit.

The signal displayed appears to be modulated by ~2.64MHz. Assuming an error induced by the scope accuracy it appears the primary signal is ~7 times the modulation, where 18.7/2.64 = 7.083.

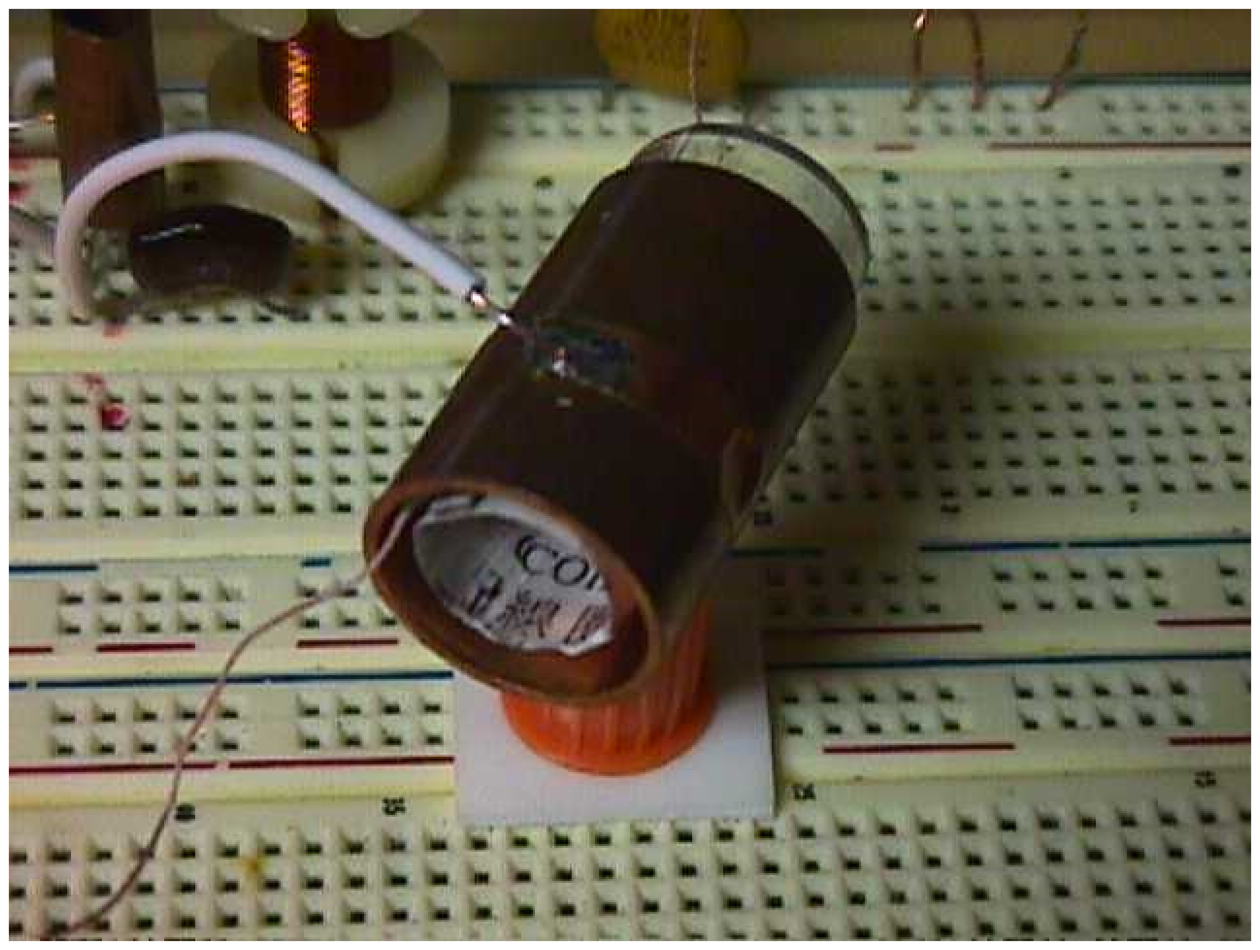
What adds to the confusion is the following chart derived from work with the earlier circuits. Primary response peaks do not match the 18.7MHz as indicated above.

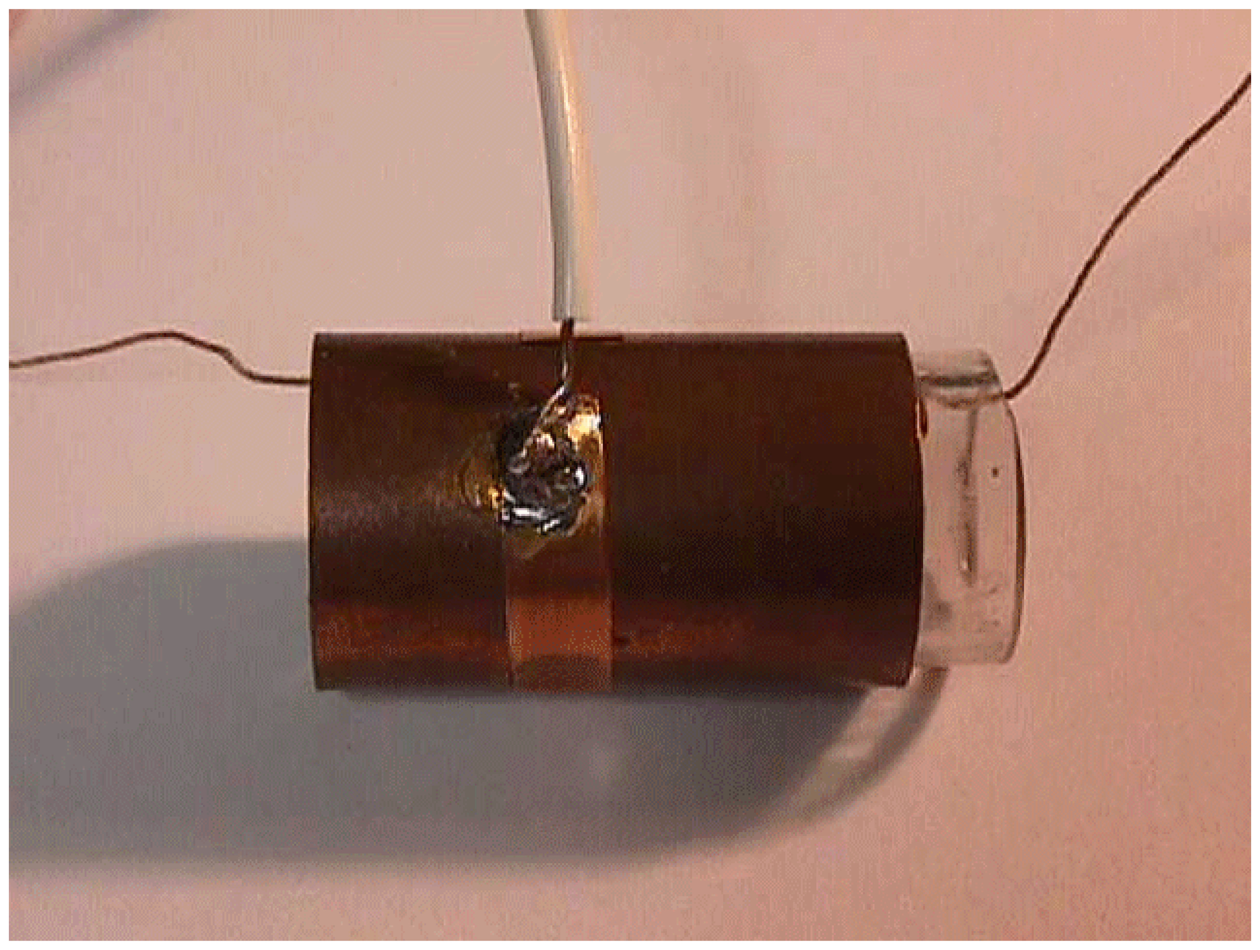
**Spatial Collectors**

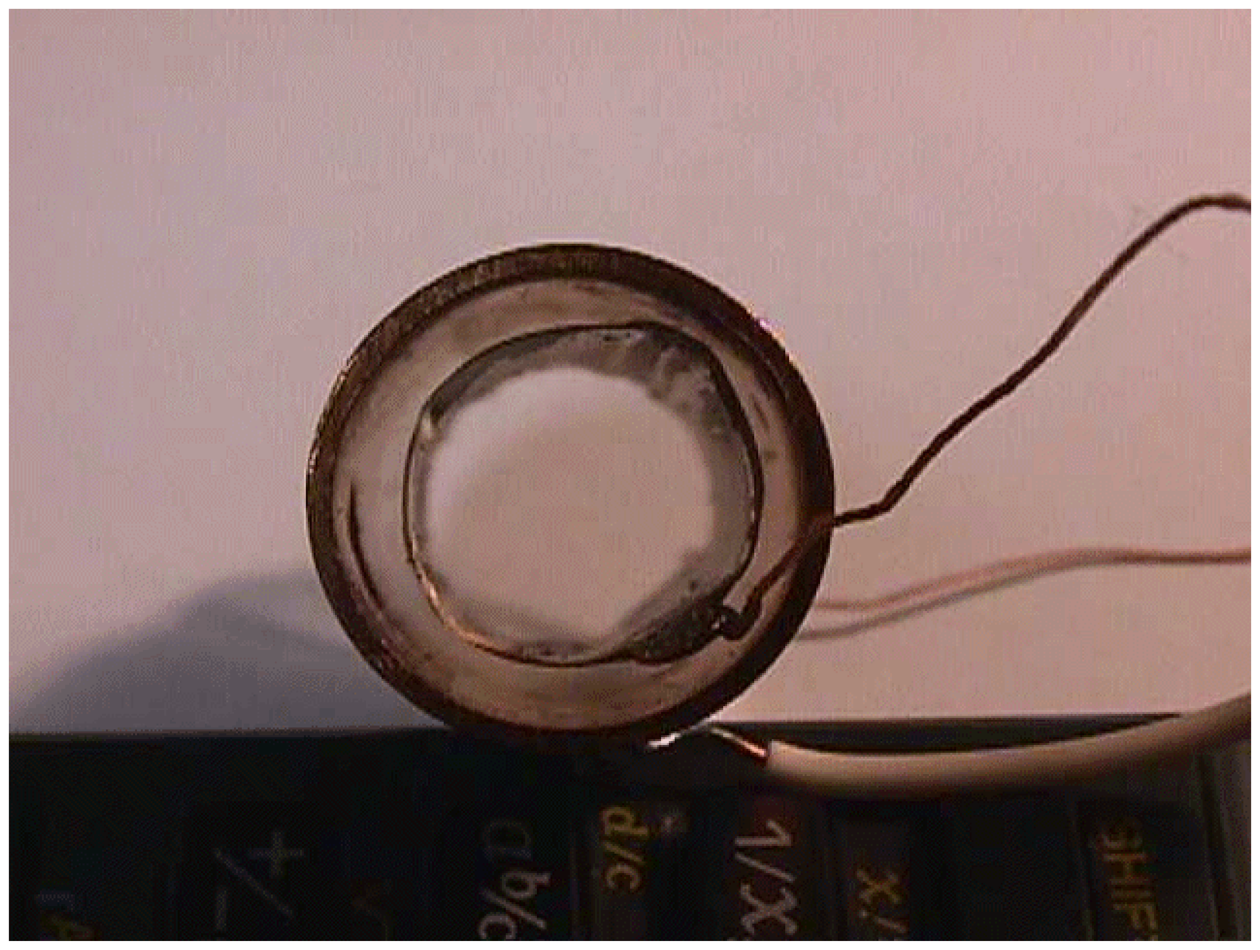
One of the first collectors built from a single Cu tube coupling and coil. The circuit used a separate AV Plug to drive each LED. The Cu tube center is connected to the SEC Exciters collector. The coil inside of the Cu tube is what is driving the LED's.



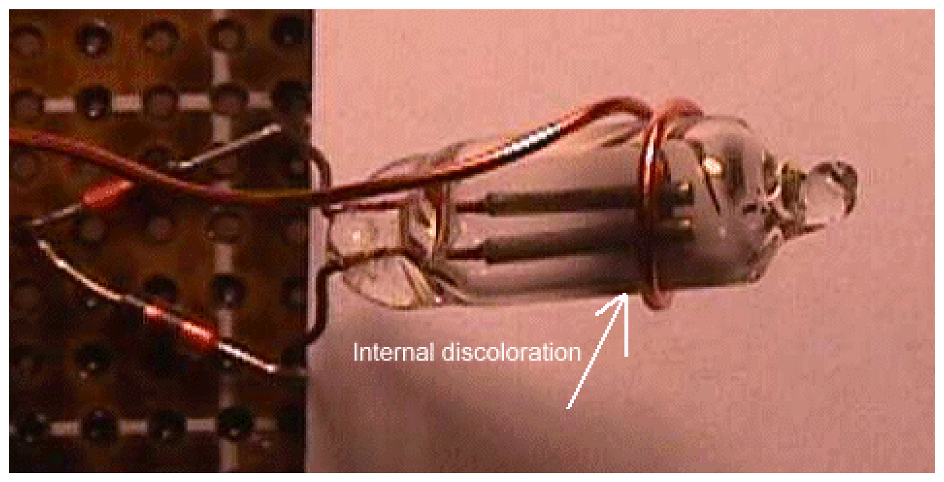
The following image is a close up view of a Cu single tube arrangement.



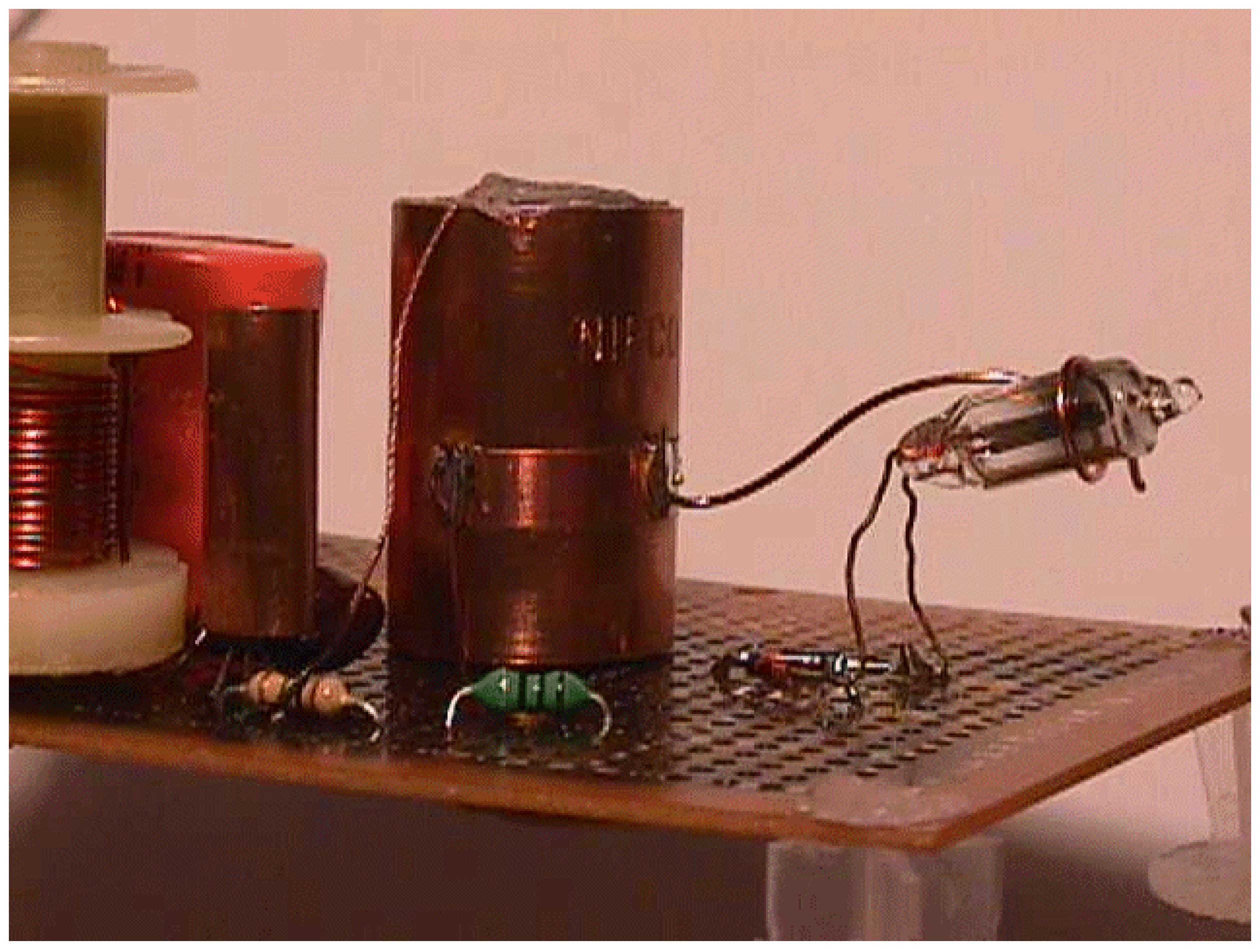




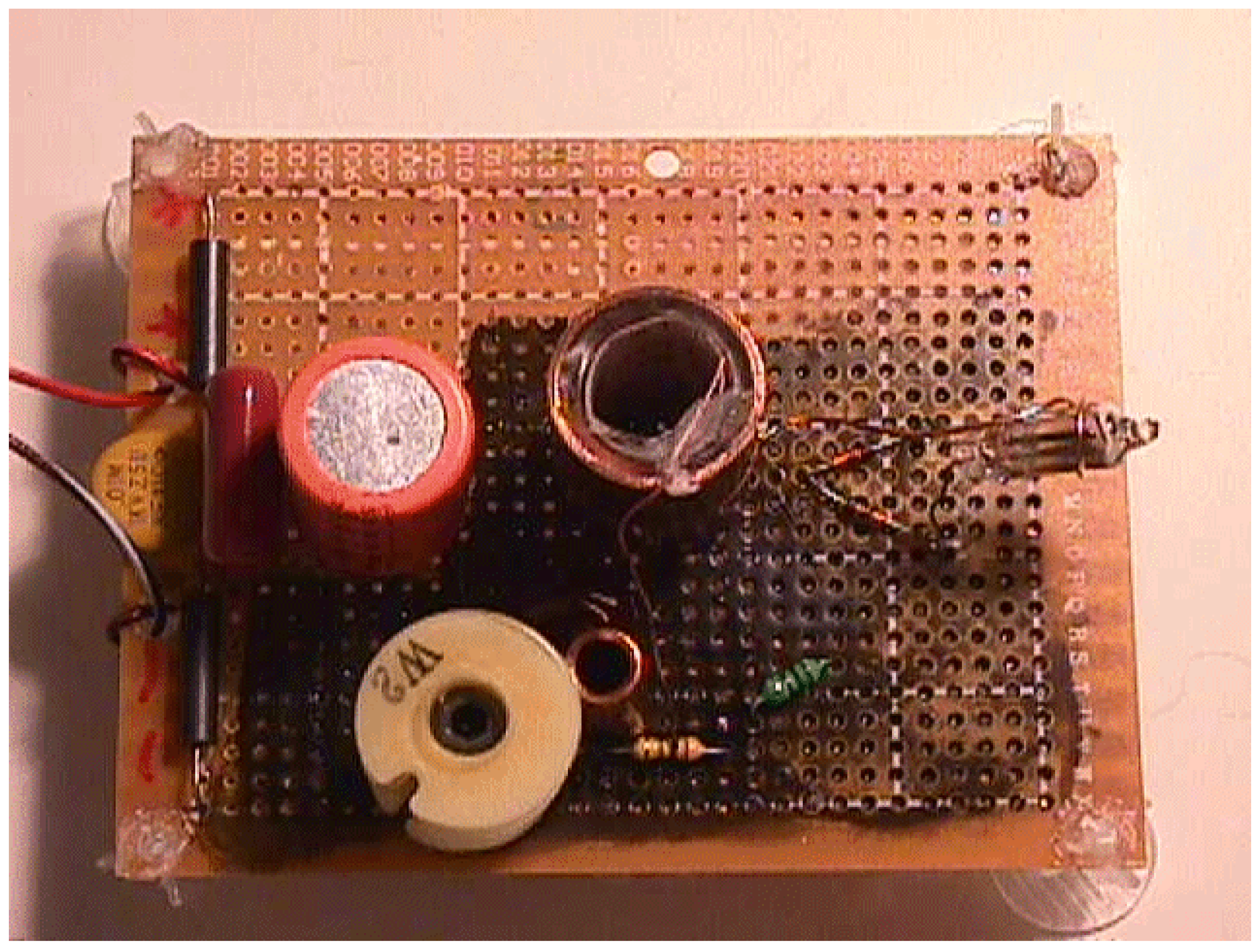
The drive supplied by a tube collector is so large that it will destroy a 1.9mA Neon in a few hours of operation. During initial testing the glass on a few neon's began to deform before self-destruction by arc over.



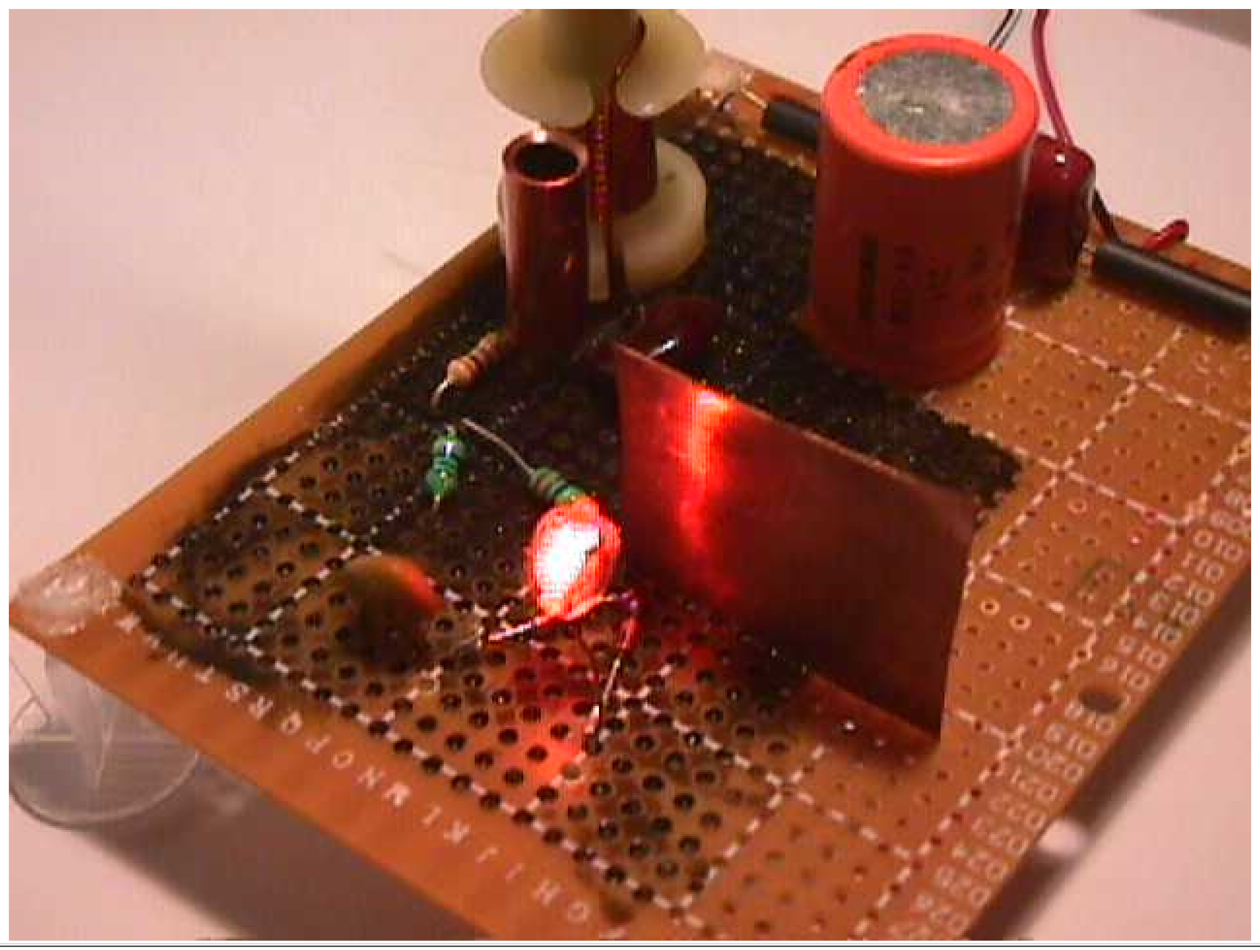

The following image is of the lab unit that was tested in the calorimeter. The overall simplicity of the circuit is evident.



The next image is a top view of the circuit that was tested.



The following image shows the circuit with an added collector wing.



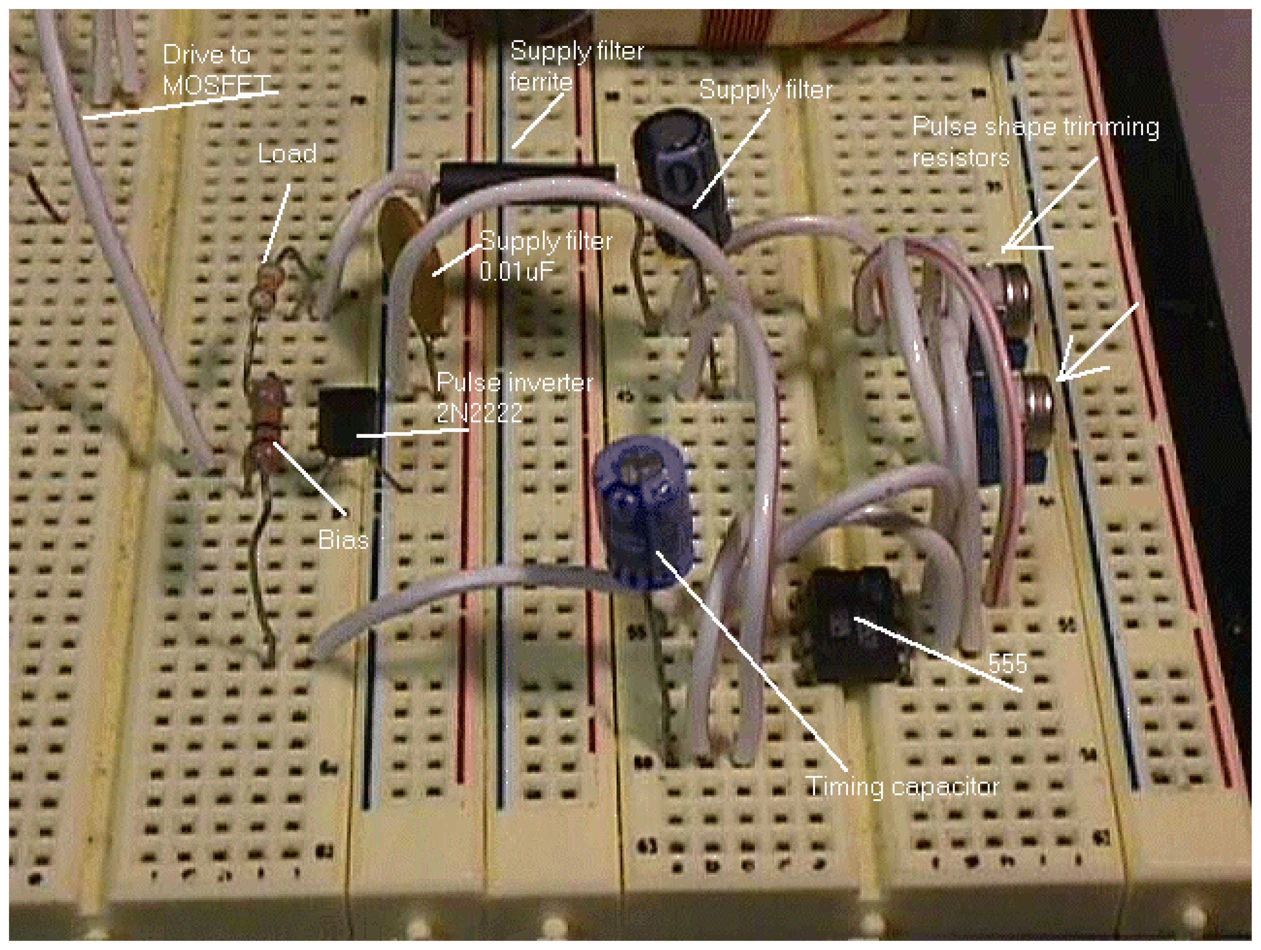
**The Quest for Higher Power**

The following circuit shows a standard 555 setup to produce continuous 50% duty cycle pulse train. There is the addition of a pulse inverter which comes into play should the driver ON period be required to be shorter than the OFF period.

A large filter capacitor and a ferrite bead is used to decouple the 555 from noise on the power rail. In addition to the large filter capacitor a number of 0.01uF ceramic bypass capacitors are used.

The circuit is only used to apply one second or longer ON pulses to the high voltage switch in the power section. This switching circuit was constructed for convenience and could be implemented in a number of ways.

**Fig: HP01**



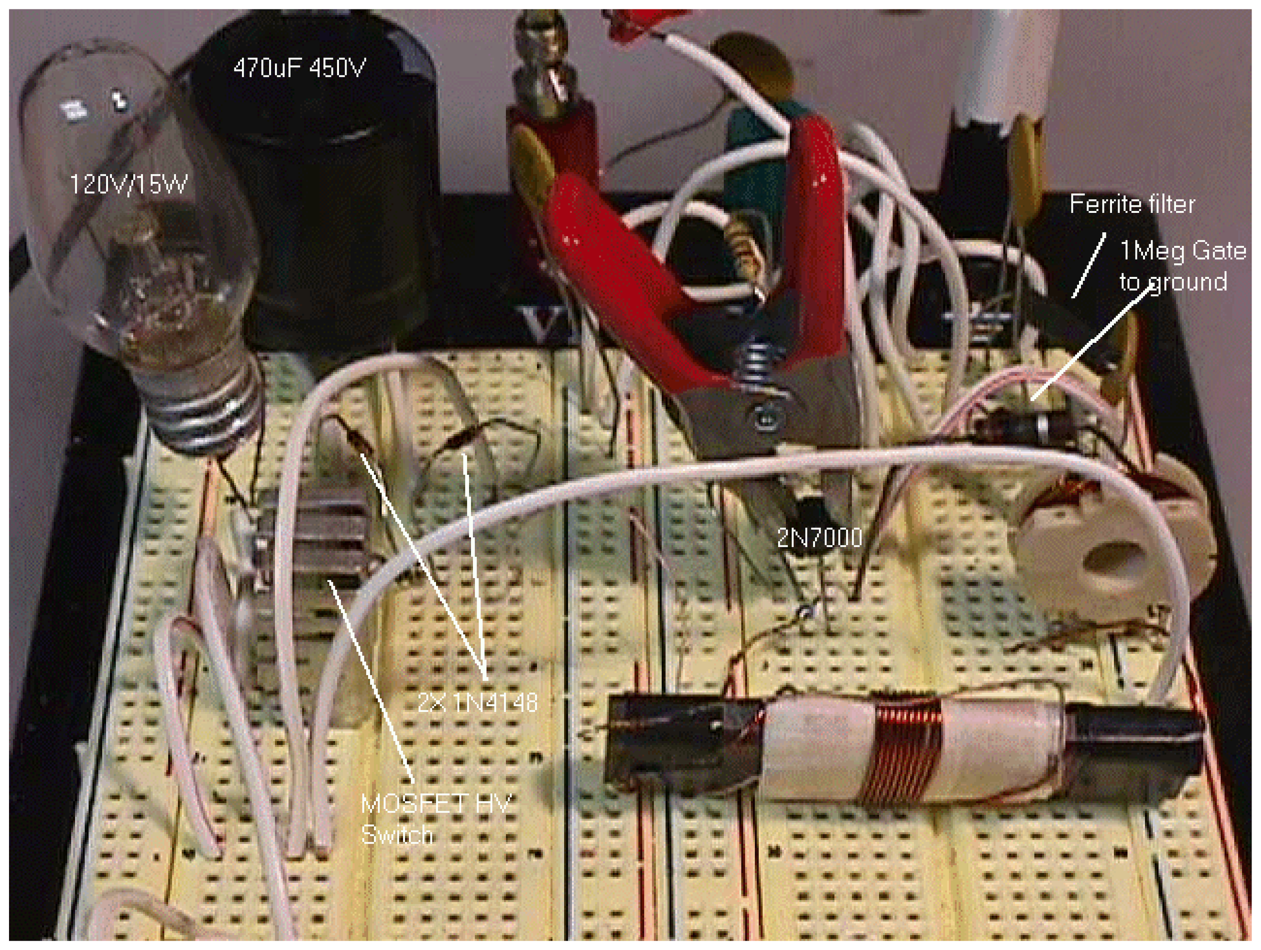

The power and switching section is quite simple and straight forward, provided one has replicated and understands the LED driver systems explained in the beginning of this paper.

The schematic shows the circuit wiring but a simple overview will explain the circuits lack of complexity.

The energy storage capacitor in this example is a simple 450uF/450V electrolytic. The standard CE coil and the two 1N4148 diodes in the typical AV Plug configuration. In this example the 2N7000 is driven by a signal generator whereas the schematic shows a self contained oscillator and driver.

Shown with its heat sink is the IRF-840 that is the high voltage switch. The load a 120V/15W incandescent lamp is connected from the storage capacitor to the drain of the IRF-840.

**Fig: HP02**




In the following photo the 555 was disabled so that the switch was biased full ON. It is easily seen that the Plug is able to sustain a fair amount of constant current.

**Fig: HP03**

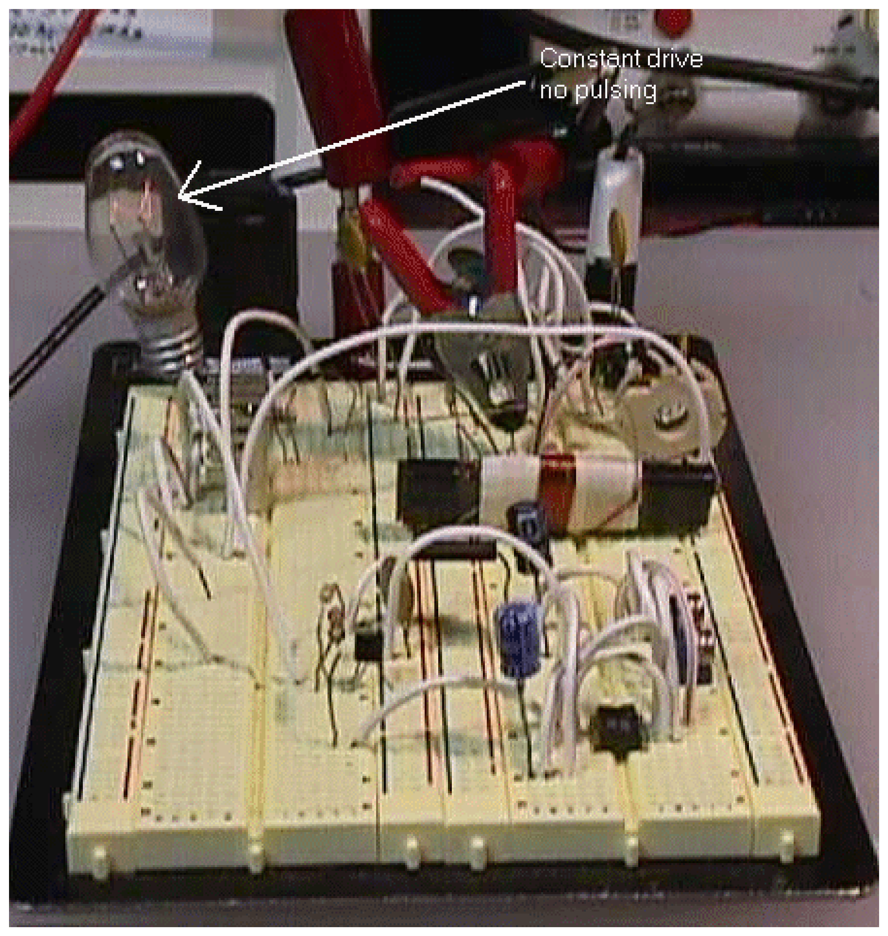



**Fig: HP04**

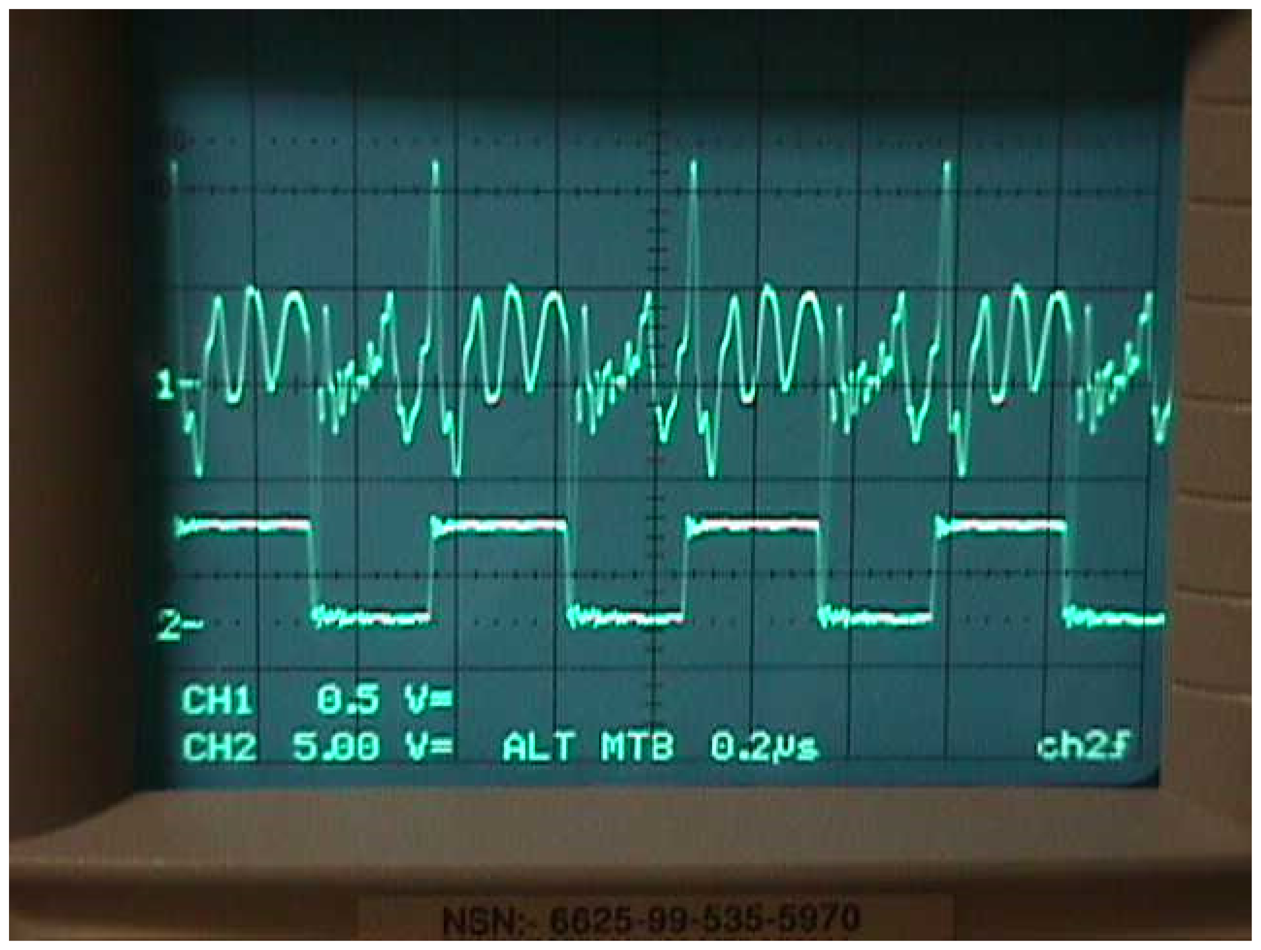



**Fig: HP05**

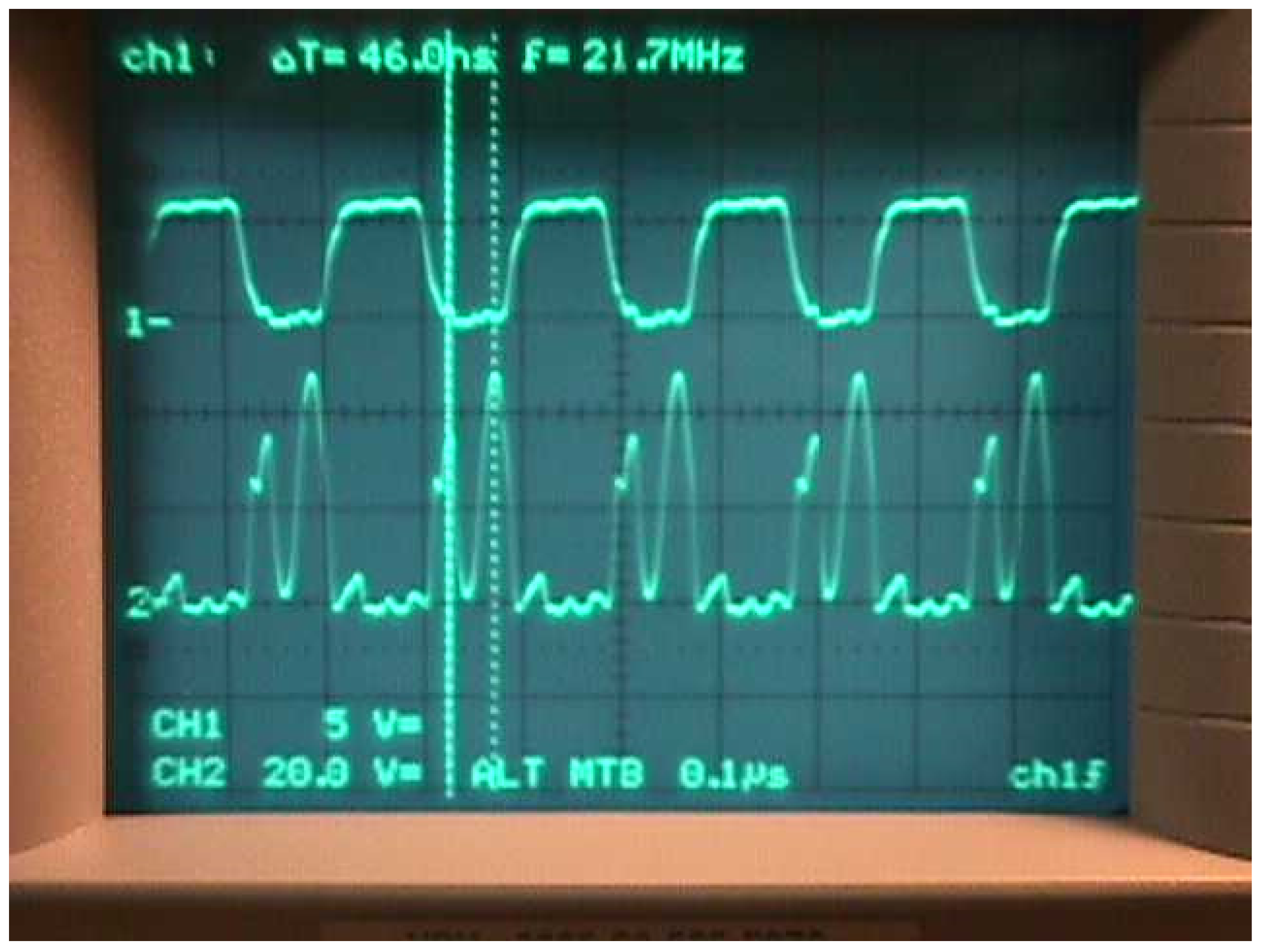
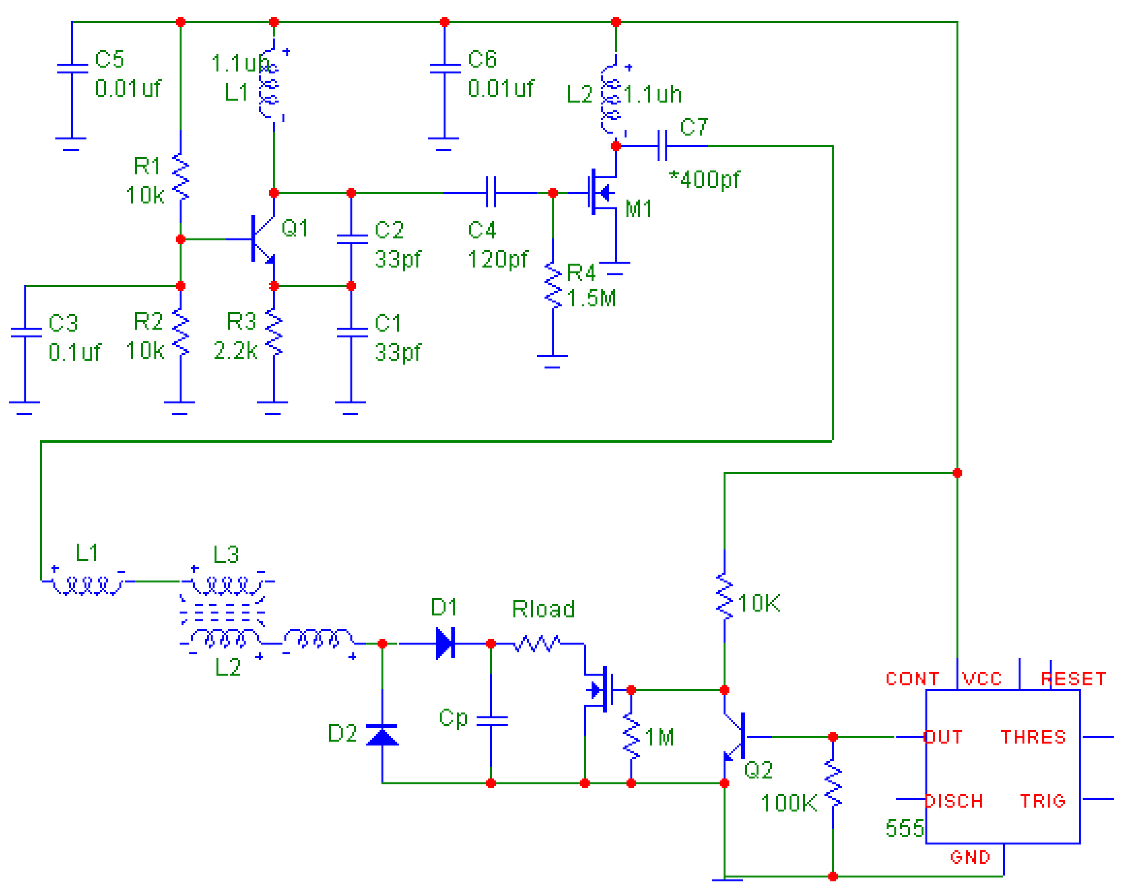
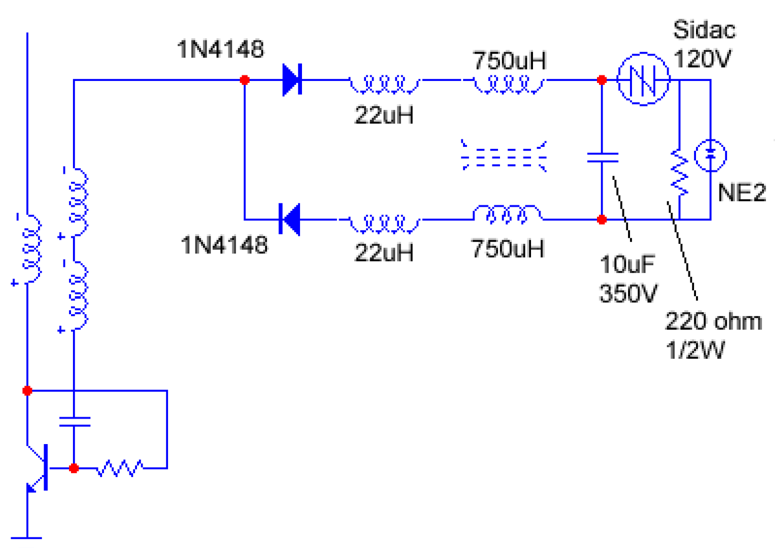



**Fig: HP06**




**Driving a Resistance Load**

**Fig: Pwr01**

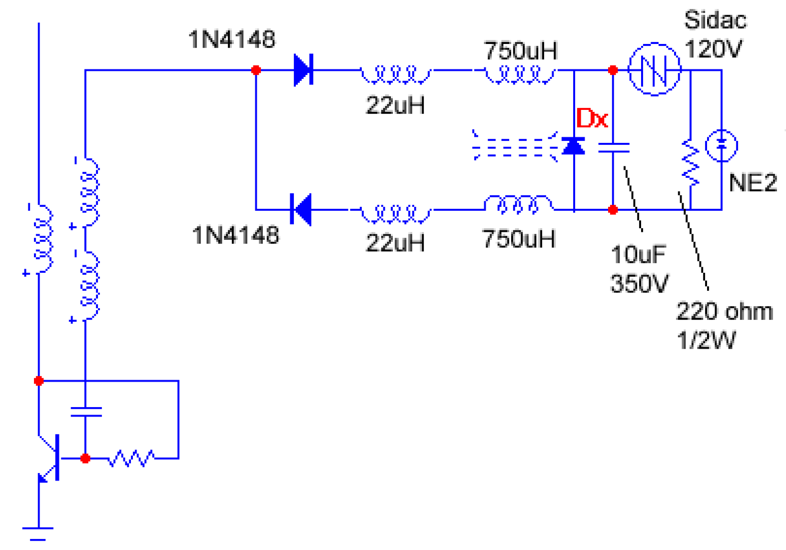



In Fig: Pwr01 a simplified circuit is shown for a fixed resistive load. This particular circuit uses a single Sidac to do the switching of the charge stored in the power capacitor into the load resistor. This circuit has removed the requirement of having additional component counts in order to handle the isolated charge buildup switching into the load.

The NE2 neon does not have to be in the circuit and is used only as an indicator of the switching taking place. In most cases the NE2 will require a limiting resistance to prevent its burn out. The coil size and the supply voltage will determine the output voltage. A Sidac is chosen to match the coil and driver input voltage, where if you are going to have a large secondary you may want to use a Sidac that is higher than 120V (shown in the example).

The two 22uH chokes have an SRF of 13mHz and the matching series inductor has an SRF of 8mHz. The combination of the four inductances offer a good degree of isolation between the output of the 1N4148's, power capacitor and load. Allowing for greater stability in overall circuit operation.

**Fig: Pwr02**




One of the problems realized in SEC circuits driving LED's was the high failure rate of the LED's. The problem was determined to be the reverse voltage applied to the LED chain. Normally the LED's will have a Vr ~= 5.0 volts and a forward voltage of Vf ~= 3.0 volts. In circuits that for example are driving 30 LED's the forward voltage must be at least 30 x 3 or 90 volts. Assuming (for analysis only) that the driving waveform is symmetrical then the Vr will also be 90 volts. This of course would not be a problem as Vr = 30 x 5 = 150 volts, but the problem is that the forward voltage is capped only by the number of LED's in the chain and if the total number of LED's time the forward drop of 3.0 volts is less than what the driver is capable of supplying, then the reverse voltage will be equal to the maximum of the driver voltage output.

An example of this problem would be you are driving 20 LED's from a driver that supplies a peak voltage of 185 volts. In this case the forward voltage is capped at 20 x 3 = 60 volts, but the reverse voltage will climb to the maximum of 185 volts. If our LED's have a Vr of 5 volts then they can only stand (without safety margin) 20 x 5 = 100. It is easy to see that in this case the LED's will be exposed to a reverse voltage of 85 volts above there maximum.

This problem did not have the simple straight forward solution of adding a diode until the addition of the decoupling (matching) inductors were added as shown in Fig: Pwr01 and Pwr02. Once this network of inductors was added the addition of a fast switching diode Dx greatly reduced if not solved the problem of frequent catastrophic LED failures.

Diode Dx needs to be able to handle greater current and voltage than the 1N4148's used in the AV Plug. A diode that appears to work without changing the loading is the UF4007, an Ultra High Frequency 1kv at 1 ampere switching diode.

{1}Alexander V. Frolov

Power for Nothing — http://keelynet.com/energy/frolov2.htm

http://www.skybooksusa.com/time-travel/physics/enersour.htm

Sources of Excess Energy — http://www.eskimo.com/~bilb/freenrg/frolov2.txt

Power from Nothing

{2} Avramenko's US and foreign Patents. — http://v3.espacenet.com/origdoc?CY=ch&LG=fr&DB=EPODOC&IDX=US6104107&DOC=dcb65d04ab6820d7924a01bf873fe6b65d

United States Patent Aug. 15, 2000 Avramenko et al.

also see from November 25, 1993 — http://v3.espacenet.com/origdoc?CY=ch&LG=fr&DB=EPODOC&IDX=WO93239007&DOC=deb45b02a96923dc96560dcb934bf2c269

{3} Avramenko's Free Electrons Pump ( AFEP v1.0)

By Jean-Louis Naudin created on November 1st, 1999 - JLN Labs - Last update November 3rd, 1999 — http://jnaudin.free.fr/html/afep01.htm

Single-Wire Energy Transmission test By Jean-Louis Naudin created on November 3rd,, 1999 - JLN Labs - Last update November 5th, — http://jnaudin.free.fr/html/afep01.htm

{4} Stefan Hartmann — http://www.overunity.com