2 FREQ-MAGCLASH TPU

Ver. 1.3.2.1 - 05-23-2007
by ronotte

1 INTRODUCTION

This project has been based mainly after reading an idea by Jacob[1], it follows a number of excerpts from said thread, it is worthwhile to spend time to carefully read & re-read them in order to get a correct mental frame.

From Jacob:

For a long time I have been puzzled by the following question from Steven:

"Rotation of field. . . How many people think about that. If you could have a field that you could think of as a big ball. And you could rotate it in two directions what would the ramifications be?"

I couldn't tell what the ramification would be at all! Reason is that I was visually picturing the "two directions" as happening in 2 different Cartesian planes.

Then, I realized the obvious: the rotation had to occur in the same plane. Now it all made sense...

So, if we rephrase Steven's question to this new context, it becomes:

"Rotation of field. . . How many people think about that. If you could have a field that you could think of as a big ball. And you could rotate it clockwise and counter clockwise at the same time, what would the ramifications be?"

In this new context, we DO have implications, don't we? At least 3 anyway:

1) We now have 2 balls instead of one because we are rotating in opposite directions.

2) We also have 2 particles accelerators. Here is why: When, in electro-magnetism, we consider the movement of electric charges in a magnetic field, we usually consider charges moving perpendicularly to the B field. However, it is important to realize that the preferred path for electrons in a magnetic field is parallel to the flux lines. This has been observed in space where electrons near the earth are sucked in at on pole and released at the other one. So, since an electron in a magnetic field follows the flux lines while moving forward at a relatively low speed and since the collector in the flux line of the "ball" we are rotating , there will always be some free electrons in the collector accelerated to the "ball" rotational speed.

3) Every half revolution or so, the 2 balls will come to a relative position where their ball shaped fields will be in complete opposition, and therefore cancel each other. When this occurs, something will happen. This something is what we are interested

[1] Gn0sis Forum – Thread: **Jacobs "magnetic reconnection" theory** - *2006/12/12 20:35*

in...

Before going any further, I would like to point out that several posts make it abundantly clear that Steven doesn't know for sure where the energy produced by his device comes from. The official line is that it comes from the earth magnetic field, but modern physics shows this is not the case. Because of this, there are 2 models to explain what goes on inside TPU.

The SM model

Steven says that if we can cancel the magnetic flux, electron that are already spinning around in our particle accelerator will accelerate even more, and when the speed gets to a specific threshold, energy is released.

This model is interesting, but has 2 important drawbacks:

1) It is poorly documented. Where can we find information about this?

2) It doesn't explain the need for a special frequency mix. Just for a minimum value.

Because of these 2 drawbacks, I personally prefer the model that follows, which I call the Drake model:

The Drake model

This model is named after James F. Drake, professor of Physics at the University of Maryland[2] *Professor Drake is not aware of the existence of the Drake model in TPUology. Actually, professor Drake is probably unaware of TPUology itself.*

Nonetheless... In one of his public presentation, professor Drake plainly states:

"A reversed magnetic field is a source of free energy".

Quite a statement! A free energy source? What do we need to tap this?

Very simple! First, we need to create a "reversed magnetic field", which in this context means two opposing magnetic fields. How many segments we use to achieve this can be discussed, but using bifilar coils in individual segments achieves that goal.

Then, we need the component that taps the energy. The fun part about this component is that a simple multi-strand wire does the job. Collector is a very appropriate name for it since it must also be perpendicular to the coils, in this infamous 90 degrees no-coupling position! Gee, the TPU already has the right configuration, aren't we lucky or what?

O.K. A little theory concerning the Drake model: When opposing flux meets, it creates a situation where at a very precise point, the resulting magnetic field cancel itself. What actually happens is a reorganisation of the flux lines. "When this happen", *says Professor Drake,* "an event similar to a sonic boom takes place". *The picture below*

[2] ***http://www.glue.umd.edu/~drake/***

illustrates this magnetic explosion. The epicentre is the yellow area in the middle of the picture. What can be seen on either side of the explosion is a stream of electrons animated with an energy of hundreds of thousands of electron-volts.

This is known as magnetic reconnection, and can be described as the sudden reshaping of the magnetic field lines of the two opposing magnetic fields, linking them together so to speak. It liberates an enormous amount of energy in the dimensional plane of the collector coil. Understandingly, if you chain 3 such high energy releasing processes, you can end up with flame capable electrical power.

As it happens, this phenomena is extremely interesting. Wikipedia expands on it on these terms:

"The resistivity of the current layer allows magnetic flux from either side to diffuse through the current layer, cancelling out flux from the other side of the boundary. "

i.e.: the disappearance of the magnetic field is compensated with the apparition of an electrical current in the collector.

Wikipedia continues: "When this happens, the plasma is pulled out by magnetic tension along the direction of the magnetic field lines."

i.e.: if there are nails on the wall, they could be sucked in.

And again: "The resulting drop in pressure pulls more plasma and magnetic flux into the central region, yielding a self-sustaining process."
i.e.: We need a kill switch.

Now, back to the Drake model: There used to be a problem with magnetic reconnection: from a theorical standpoint it was happening too fast! But professor Drake noticed something really weird that seems to explain this discrepancy: the presence of whistler waves. Professor Drake call this "Whistler Signature".

What's a whistler wave? Wikipedia answers it this way: "A Whistler is a very low frequency electromagnetic (radio) wave generated by lightning. Frequencies of whistlers are 1 to 30 kHz, with maximum usually at 3 to 5 kHz. Although they are electromagnetic waves, they occur at audio frequencies, and can be converted to audio using a suitable receiver. They are produced by lightning strikes (mostly intracloud and return-path) where the impulse travels away from the earth and returns to the earth traveling along magnetic field lines."

What professor Drake says is that the magnetic reconnection process is driven by very specific frequencies like the one we need to produce the "TPU effect". That these waves act as a catalist to produce magnetic explosions known as magnetic reconnection. Well, it certainly looks as if all the ingredients are there, doesn't it?

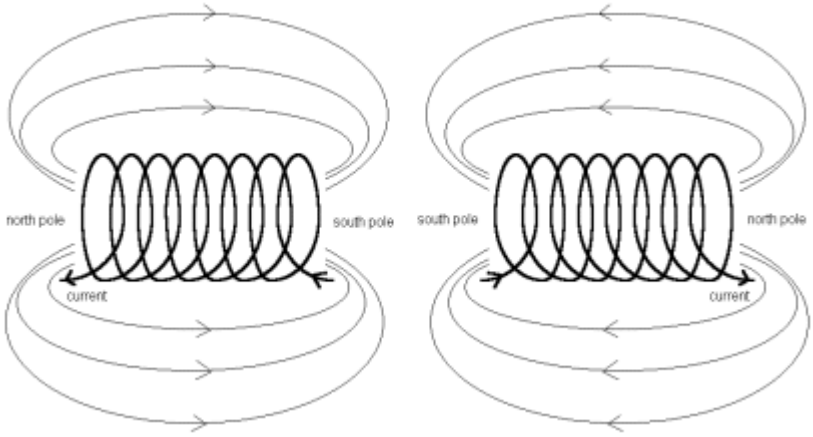
When we consider this model, understanding TPU windings and processes becomes much easier. We evidently have to rotate two magnetic fields in opposite directions. How this is achieved is a matter of strategy: one full lenght segment, 3 X 120 degrees segments, 4 X 90 degrees segments... Like Steven said: different configurations can yield results. But it would seem that using coils that go all the way around makes the

process very tricky.

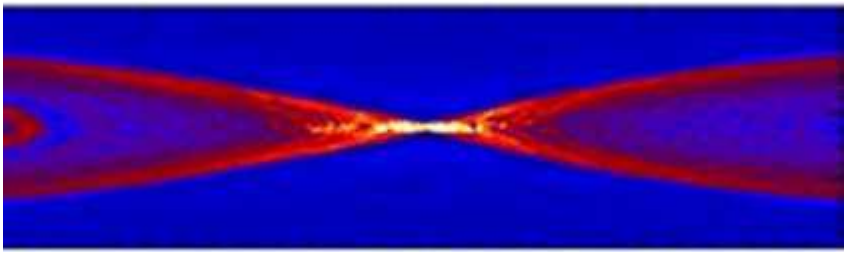
Mixing the frequencies can also be achieved in several ways. Personally, I would first try rotating each "ball" at a different speed. We could for instance have a clockwise rotation at 245 Khz, and a counter-clockwise rotation at 35 Khz, so that every time the flux cancels, the radial angle is different.
Also, if we feed the power generated by the magnetic explosions occurring in the first collector to the control windings of the second collector coil, we have a situation where the bullet fired by a cannon becomes another cannon. And so on...

Magnetic reconnection is a magnetic explosion that occurs when 2 magnetic fields are in opposition and the right frequency is present. This is the result of the flux lines reorganizing causing some kind of short circuit between both fields. When this happens, a high energy electron stream appears as show below:

<u>First picture: 2 fields in opposition</u>

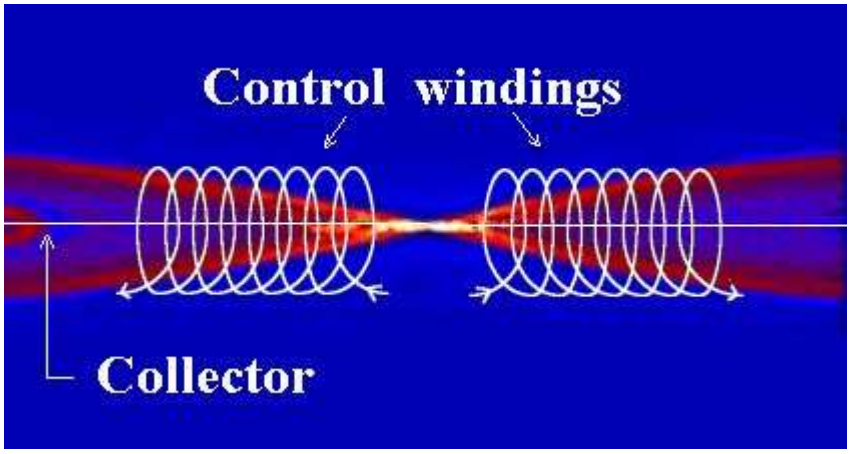


Second picture: magnetic explosion with high energy electrons on both side of the Explosion. Here is the second one:



You'll notice that the electron stream is in the same dimensional plane as the collector coil, which serves as the current layer. Anyone who looks at these 2 pictures and doesn't understand what makes a TPU tick should go directly to jail without passing Go and without collecting $200.

OK, just to clarify this further, here is a better drawing:



Of course, everyone has noticed that if we slide these two coils on top of one another, we end up with one single coil where each of the two conductors is driven in opposition to the other one. Therefore, as far as this control coil is concerned, we have what SM referred to as flux cancellation, although in reality, the flux is still there. But at this point, we now have half of what is needed for the successful operation of the device (i.e.: for the reconnection event to happen). And fortunately, we still have one unused control layer...

The catalyst in magnetic reconnection is the whistler wave. These waves are characterized by some sort of compounded periodicity. A plasma is a friendly environment for such waves, but a similar environment can also be created. That is the purpose of the 35 kHz feed in the TPU: it becomes the catalyst in the energy production process. This similarity is important. Google "35 kHz" and you'll see that most results are plasma related.

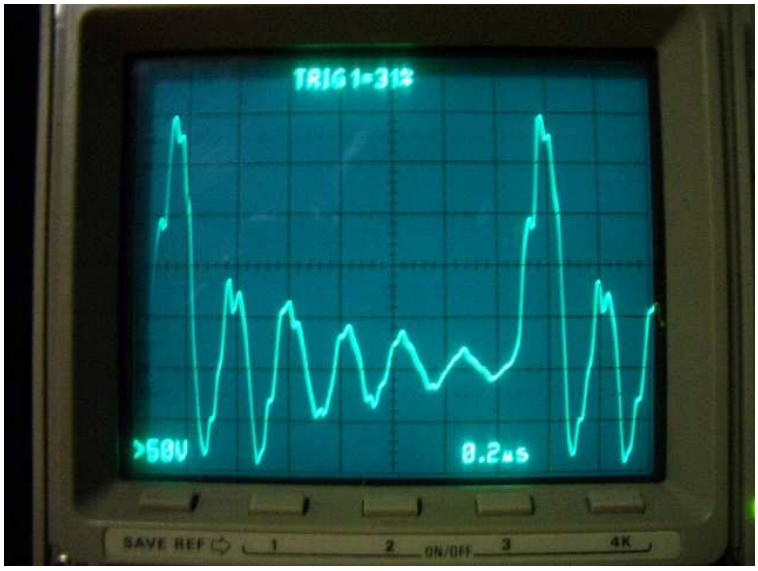
Note-1:
Here is where I took the decision to test this idea. To be honest I had had to design it for low frequencies (including the apparent necessity to inject/find resonances @ 35KHz for the whistler wave catalyst), but as I were anxious to see a result I opted to start quickly at higher frequencies: that means less copper to wind….and quick on-line.

Note-2:
It is obvious that this project will be scaled down later to a much lower range.

2 A LITTLE OF THEORY[3]

In 1997 a device created by Steven Mark (SM) delivered 1 Kw of power with the help of only a piece of wire and some SS circuitry.

Looking closely at NMR [Nuclear Magnetic Resonance] it is evident that pulsing copper coils can produce OU. Output from Copper wire driven by the input pulse plus the atoms natural self regulating negative response to the input pulse, seems to be the method (NMR).
In a system with one coil wrapped at 90 degrees over a larger inner coil to form a donut the following wave forms are observed. This happens for system pulsed with square waves of almost any frequency (in this case 1.4MHz).



NMR waveform
(Shown is the 5MHz signature observed on this TPU's load (a light-bulb)).

If one now adds these output pulses up coming back out of the 90 degree coil they discover it has more energy then the single pulse starting the process. touching.

The key to power extraction may be related to how the atoms of Copper recover, and it has been observed that the back EMF (BEMF) pulses are often more powerful then the electronics that generate them, often even burning out the driver transistors. While this process may seem rather random, it is not random but related to the NMR rates and when the pulses coincide.

Secondly it was amazingly discovered that even scalar wound coils still produce the NMR pulse just before the energy moves out of the EM layer. These kicks are ever present in scalar wound input coils as well as 90 degree coils wrapped around them.

The simple beauty of using a 90 degree coil to capture the back EMF allows us to use almost any input frequency (*this just what I have observed*) to generate perfectly resonant output pulses of the above waveform which can now be used on the next stage of a copper device as a preconditioned input pulse. A properly sized stacked array of donut coils may thus be expected to produce overunity at around 5 MHz.

[3] Freely excerpted from: *Over unity in Copper*

It has been pointed out that using pulses at 90 degrees to one another **does not create a true rotating magnetic field**, however one must realize that at the Proton layer, the torsion is in fact in rotation. The rotation however is a spiral rotation and it is driven by the mass of the copper that is in rotation. While a pulse of EM through the Copper moves along its Electron shell, the spiralling rotation at the Proton shell is very real, and the tempic field is set now into a smooth sine wave spiralling motion containing more energy then it took to start this redirection of its normal motion.

The one main advantage to using Copper is that it is the one element that will propagate both EM and Torsion fields through its length. The torsion flows most freely when setting at 45 degrees to the magnetic field, so as the field swings between each 90 degree angle there will be a spurt of torsion through the wire as it crosses 45 degrees. This will cause a physical vibration or a motional effect. As the magnetic field crosses 90 degrees to a wire **WE GET THE NMR PULSE TRAIN** ,an EM effect.

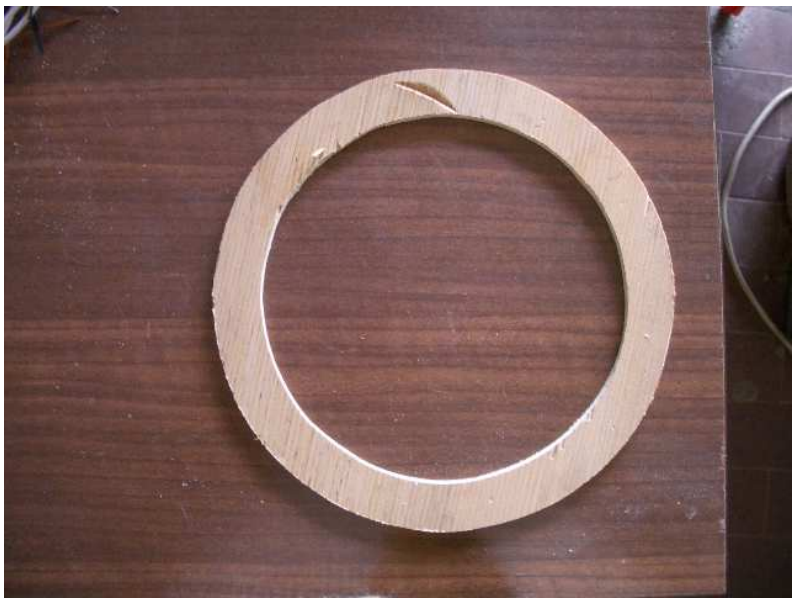
3 RING CONSTRUCTION

This ‘One Ring’ TPU is composed by:

1. An internal annular support.
2. An Inner Collector coil.
3. Four Control coils.
4. An outer Collector coil.

3.1 Internal annular support

The internal annular support media has the purpose to provide a dimensionally stable platform on and around which all the coils will be placed. In this case, just to be quick, I choose to make use of a **5 mm**. compensated wood but of course you may want to use plastics or perhaps better: expanded polyurethane sheet (normally used to make walls thermal isolation), this because it is ‘soft’ and would help to absorb the inner collector jerks. It follows a picture of this wood support.



Coil’s support

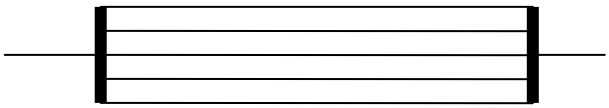
To cut it from a sheet I used a Jig-saw and a template (computer generated) printed and glued over.

Dimensions:

- Inner diameter 18,0 cm
- Outer diameter 23,0 cm
- Width 2,5 cm
- Thickness 5 mm.

3.2 Inner Collector Coil

The Inner collector coil in this version is made by 3 turns of 5 Litz wire in parallel, each Litz wire is composed by 40 copper leads 0,05 mm/each. As in following figure. So in total I have 40 x 5 = 200 leads.



These Litz wire must be put over the support (annular wood) and placed near the centre. I just glued them onto the wood in order to keep them steady.

In alternative I think that you could use standard 1mm standard stranded wire…..eventually you could put 2 4 wire in parallel….or what you want to try. What you obtain is a '**fla**t' type of coil that minimize the distance with control coils.

Note **1**: About the turns number I used 3, but probably 1 could be enough.

Note **2**: Gustav on Gn0sis has pointed out that:

> *" When you wind the control coils around this setup, the result will be that the central axis of the inner collector does not coincide with the central axis of the 'control coils torus'. Instead the inner collector will lie above the central axis of the torus.*

Well **it is right so**. I did it in that way just for easy building.

Again actually there are other not solved problems: heating, jerking. With this type of design there's no way to take out the heat from the inner collector, this considering also that you have to fix the Litz wires in some way in order to prevent damaging by induced jerks .

But one thing a time. I'd like to have only those problems!

3.3 Control Coils

The Control coils are of **2 parallel wires kind**. There are 4 coils at 90 degrees each other as usual to setup a rot mag field as per pat 390721. These coils, in consideration of the support, will be of **flat**-type as the width is bigger of the thickness. It follows a picture of these wired CC that shows well what I mean.

4 2 wire parallel wound Control Coils

Here you can see that there is a gap of about 1,5 cm. between a coil and the next one (the wood width inequality is due to my fault in preparing the support).

Each coil is made by standard 1mm stranded electrical wire with standard CE isolation. There are **21 parallel wound turns for each coil**.
It is possible to see also the two output leads of paralleled Litz wire (that with Faston red pins).

I do suggest to pre-cut 8 x lengths of just a bit more than 1 mt each before start the windings in order to get equal turns for all the coils. Different colours also help (after) to identify the leads.

3.4 Output collector

The output collector coil is of bifilar kind. I used the same wire of CC. The hint is to cover all the available surface.

Output Collector

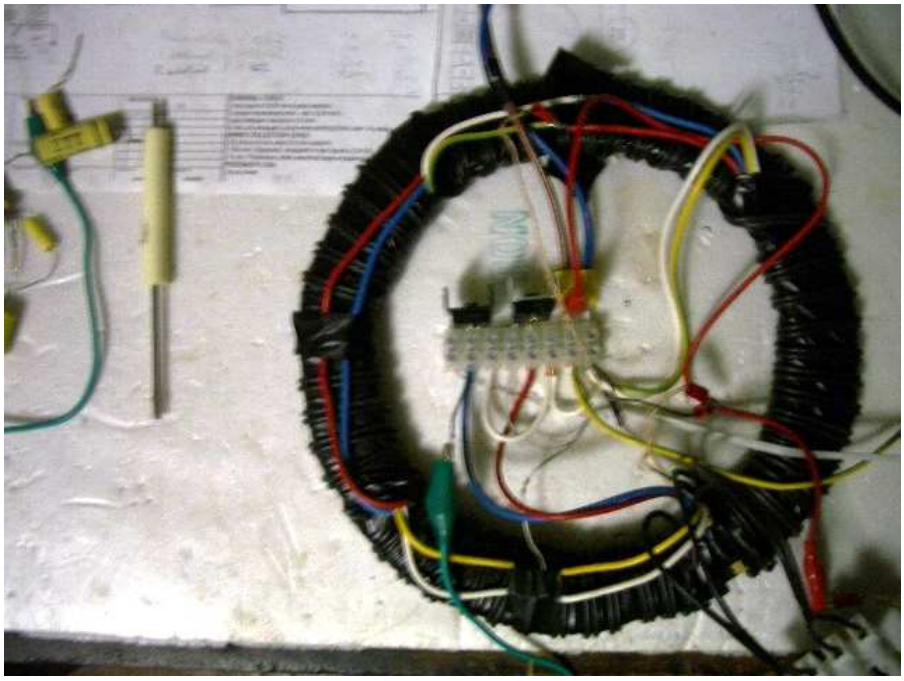
In the picture the outer collector does appear spaced but I did it again covering all the surface.

3.5 Overall consideration on building

As you see this TPU is very simple & easy to build. It weights also less than 100gm.

I do suggest strongly to provide a wood base (the same you already cut…for example) to put inside the TPU itself and were to fix all the electronics or at least the 2 power MOSFET needed.

Here is what I mean. It's a dirty example but at that time I were anxious to make it quick.



Completely wired & operative TPU

4 CONNECTIONS SCHEMATIC

This design is divided into 4 sections:

1. An Input section.
2. A driver section,
3. A Coil section.
4. An output section.

Particular attention must be observed to setup a **common return ground. This is mandatory.** I've used a big terminal block to converge all the +VDC and all the ground leads (this terminal block is placed inside or on the TPU itself).
Again is **MANDATORY** to put between these two points a **10 microF/100V polyester capacitor**. If you don't do this you will see that all your equipment, starting from the power supply, **will be affected by returning radiation/currents** (I experienced the Power Supply driven by the TPU, the LM555 oscillators wandering around, etc. !!!!!). I took lot of time to get rid of this effect!!

INPUT SECTION
The purpose of the input section (lower left in the drawing) is to provide an interface to a square-wave signal generator and a suitable way to provide synched square-waves (first and second harmonic). This task is simply done with a CMOS flip-flop.

The problem here is that I found my Wavetek 145 not able to fully drive the IRF7307 and the FF itself at top speed (till 2 MHz) so I've been forced to drive the IRF7307 with an high speed switching transistor (2N914). Of course you may use what you have, probably a 2N2222 or similar is also good for the purpose (the collector resistance value missing is 220 ohm). I will supply additional info if you need.

MOSFET DRIVER SECTION

After many tests I choose to use the standard suggested (by constructor) interface IRF7307. This effectively provide a good solution to fully drive the power MOSFET by correct charging its input capacitance. Anyway I've seen that the waveform on POWER-MOSFET gate when in operation at full speed is far from being perfect!!! The transient spikes are so high that inevitably they reflect in every thinkable mode on the gate (that is the main reason to use the IRF7307 as this last does provide a very low impedance path and so minimizing other influences).

I see ground of ulterior improvement here. So you may tryout other solutions providing to have a scope with at leas 100 MHz bandwidth.

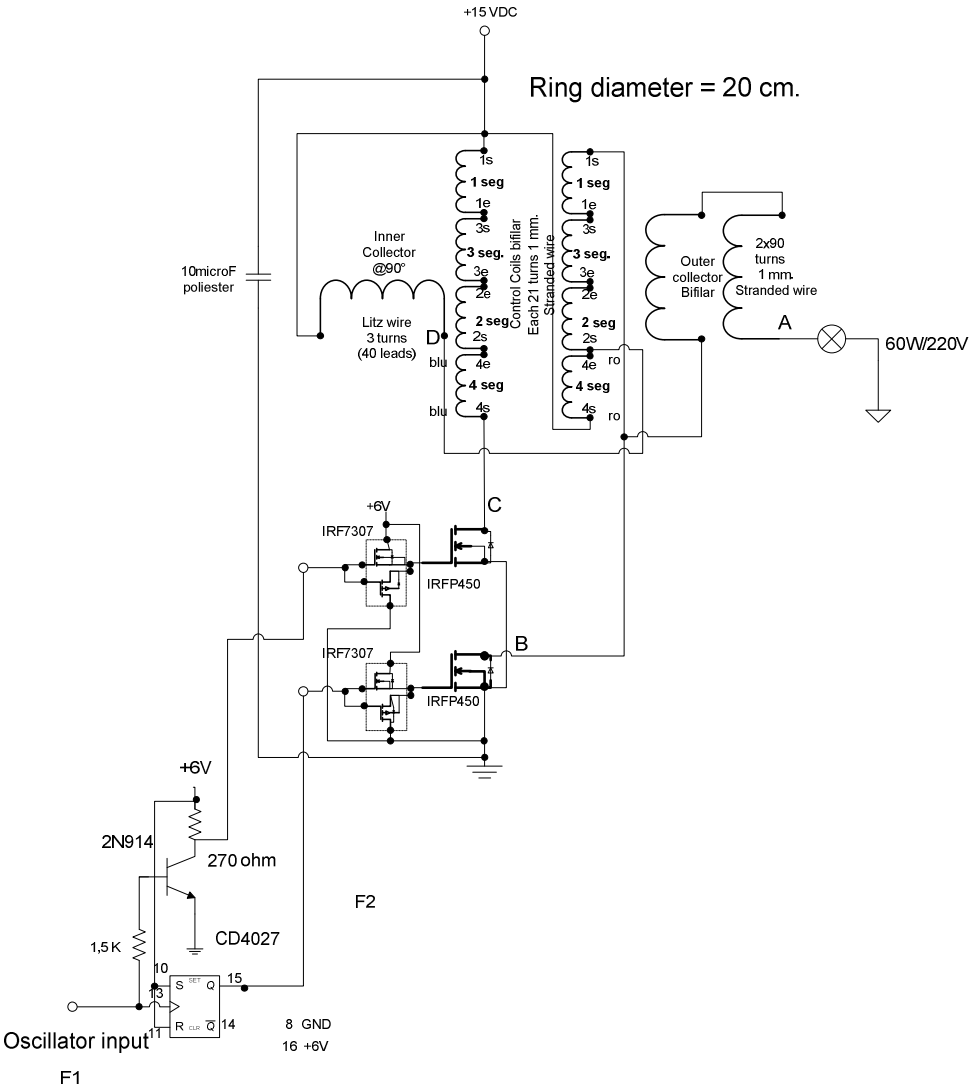
POWER MOSFET gate under full load

As you see the waveform does appear full of superimposed noise coming from the high-speed high-current switching action. In my opinion part of it is coming from ground (and so could be optimized), partly from Miller effect (very difficult to compensate), partly from electrostatic couplings from the near circuitry.

In spite of all this, the MOSFET, as you have seen does appear to switch normally!!!!!

Really at the moment is difficult to say if there's space for improvements.

What it follows is the complete schematic.



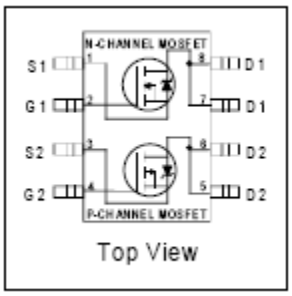
TITOLO: TPU V4 Magnetic clash test	REVISIONI 1.0		**Output section:** Bifilar, series connected Collector Coil, about 90 turns 1 mm. diam. Wire, all over the ring. **Inner Collector:** @90 deg. Respect to CC. 3 turns Litz wire **Control Coils**: contro-phase connected, each 21 turns, each side is connected as per 37021 pat.
DATA ORIGINALE: April 2 2007	SCALA	N. LAVORO	VERIFICATO: ronotte / DISEGNATO: ronotte

Note: In the above schematic I'm using the following notation on coils: **1s** =First segment (coil) start lead, **1e**= First segment (coil) end lead, and so on. You will note that the coil sequence 1-3-2-4 is according TESLA 320721 patent.

ATTENTION:
I'm speaking about parallel-wound coil for Inner Collector, actually I'm not using the bifilar connections! I'm just wiring two wires in pair to enhance mixing,
So I'm using half of the coils for the left side at the top of the schematic, & the other side of the coils on the right side of the schematic. Got it?
(I've had may questions around this matter)

The CMOS flip-flop CD4027 and the IRF7307 must be connected to a + 6V to obtain correct driving of final MOSFETs.

Here are some excerpts from the 7307 Application Note.



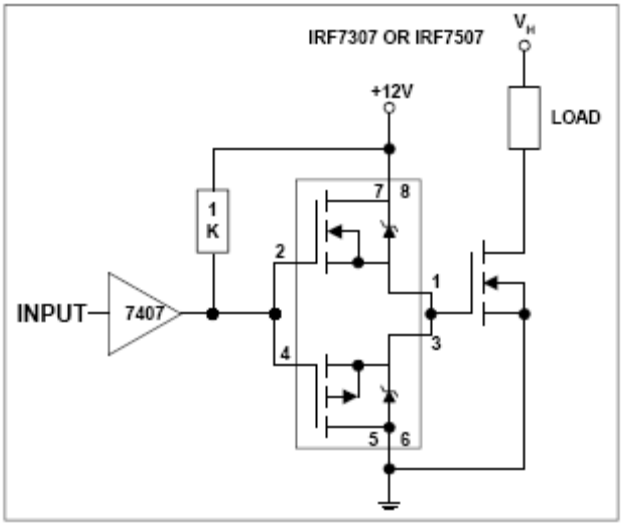


Figure 9. Simple Interface to Drive HEXFETs from TTL

Well, there is a practical problem: the IRF7307 is available only with SMD case, this makes it difficult for us to use. I did it by soldering small pieces of rigid wires to his pins helping myself with a lens and a micro solder iron. Only today I've heard by Jason that a good alternative is: **MIC4426** which comes with standard trough-hole pins.
I suggest also to use a shielded cable from your oscillator to the driver section in order to decrease the induced voltages coming from current spikes.

I point out as well that due to the adopted configuration it does not need an accurate & very stable oscillator…a standard LM555 or better LM556 is good for the job providing to use a multi-turn potentiometer to vary the freq.

About the power MOSFET used I bought 25 of IRFP450 (for about 1 € each) so I can ship at pure cost some unit if needed, same apply for IRF7307.
The IRFP450 is a very powerful unit I did with it lot of work…..never had any problem!!!
If you must buy them I suggest to try **IRF840** as they are a bit quicker (they have less input capacitance). It should be interesting to try as here speed is the key (BEMF amplitude is in a sense proportional to the speed of this switch, remember the relation: bandwidth *risetime = 0.35).

OUTPUT SECTION
The output section is composed by the Outer Collector bifilar coil. The coils are connected in non-inductive mode to the lower freq MOSFET switch. This connection mode has been chosen to try to catch everything possible (including Scalar waves!?).

Note:
For the moment the only way this TPU does deliver power is to connect a light-bulb or a standard 50-80 ohm standard resistor to the inner OR outer collector coil.

Actually I did some test with an external AMIDON torrid with 1:1 winding ratio (connected to either Collector coils) in order to correctly extract power, rectify and use it. After many tries I partially succeeded.

5 TESTS WITH 2 CONTRO-ROTATING MAG FIELS

5.1 Load connected to Outer Collector coil – Inner Collector coil in feedback

I've been much interested about Iacob reconnection theory so I've conducted a whole series of testing to check/prove it. Briefly here are the results with Inner Collector in feedback as in previous schematic and Outer collector coils (wired in Non-Inductive-Mode) hooked directly to a 60W light bulb.
After many tests I discovered that there were many interesting couples of frequencies able to make similar results. Considering that the objective is also to lower the power supply requirements (to obtain the same output results) I've chosen F1=0,700 MHz and F2=1,400 MHz. These are very high frequencies of course necessary as I've used few turns of 1mm wire (in Control Coils). Here the interesting thing is that best output is obtained using first and second harmonic....not any other different freq....of course results are good with 3rd harmonic as well.....after that all begin practically difficult as frequencies are too high and driving circuits should be completely changed.

With power supply delivering +15V @ 0,7-0,9A (checked also with a current clamp meter) I do obtain output pulses in the first quadrant of about 150 - 400V (under load) depending of various side conditions. The output waveform (checked on the bulb), when correct, is suddenly clean & repetitive, the main pulse (@1,4MHz) is about 0,8-1,0 microsecond wide and are always followed by the well known 5 MHz damped sinusoidal oscillation (100V) -still in the first quadrant). The waveform seen on both MOSFET drain are just nice clean DC pulses of 300-600DCV (depending on side conditions).

The light bulb is shining quite bright but not full brightness. I mean that the filament is almost white and hot. It's very difficult to measure the effective output power as all is impulsive and is just the filament that does provide the necessary integration!!! The current on the bulb (measured with the DC current clamp meter is about 0,2 A !!???). Just for fun I tried to connect the very same bulb to the Power Supply: it doesn't light at all.

> *"Disconnecting the bulb doesn't change more than a percent the amplitude of output waveform...I should try to connect several bulbs.....I did it but the light dim…so there's a necessity of more output current…this translates in more coils in parallel…what to stack 2 – 3 units?"*

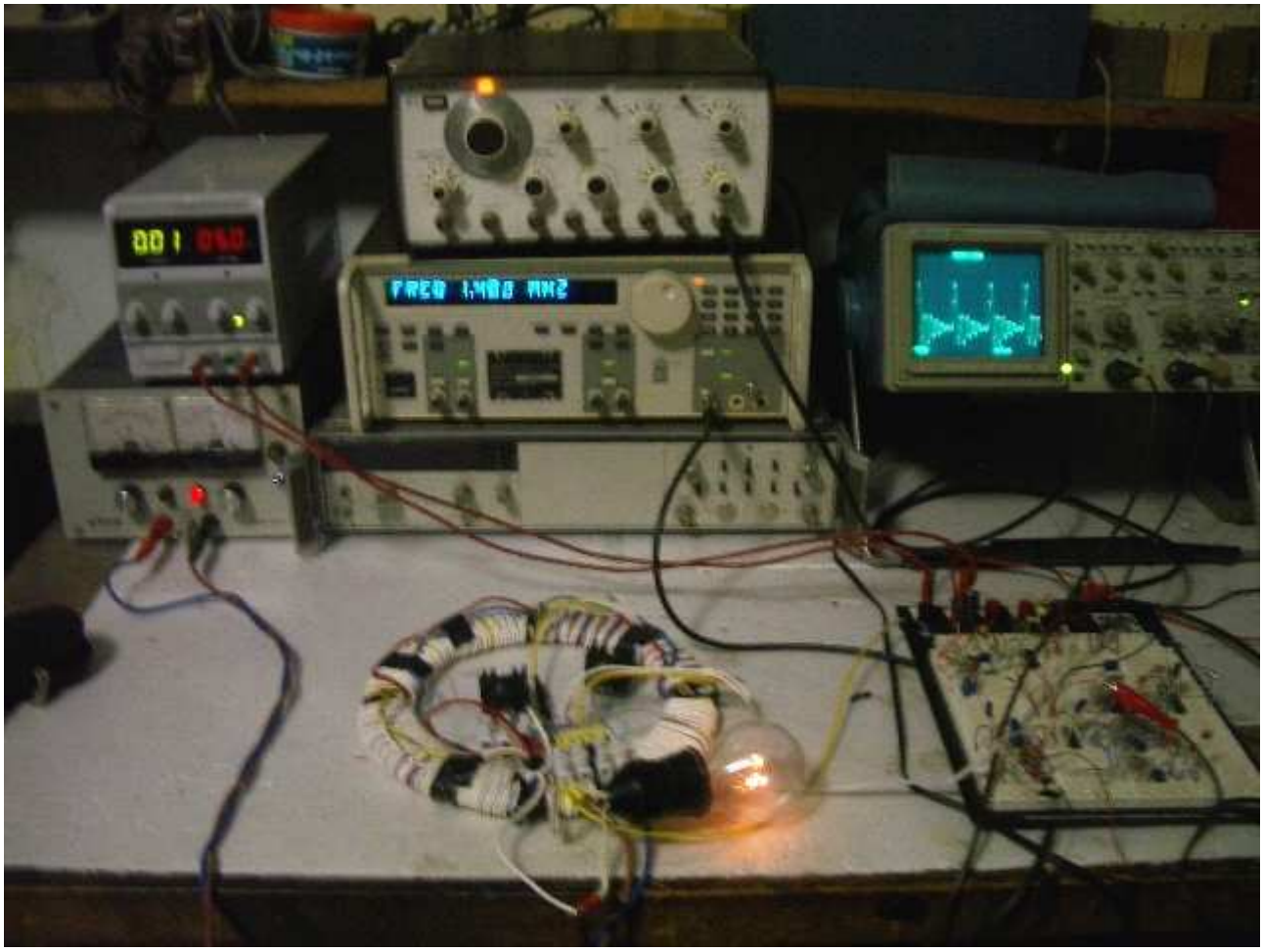
I've tried also to resonate the output collector. The condition is met with a 3Kpf/1000V capacitor. In this case I do obtain a **perfect & stable sinusoidal waveform at 1,4 MHz** - with more than 100V amplitude but this time around the zero level.

I've also tried to bridge rectify that waveform to obtain a usable DC level/power but I did not succeed as in the moment I put a polyester 10microF/100V levelling capacitance, it tamper the MOSFET and collapse the oscillations. The funny thing here's that the resonance capacitor (3Kpf/1000V) **gets hot** and for safety I've had to interrupt the test after few seconds!!!....too much internal dissipation!???

ATTENTION: later I discovered that the diode I used (just these I had in the junk-box) were not correct for the freq used…I've to try with BYV26 (1000V @ 1A < 30 nsec recover time).

DEFINITELY THIS IS THE BEST RESULT I'VE HAD WITH ANY KIND OF 3 LAYERED TPUs.

In figure there's the test bench I make use of.



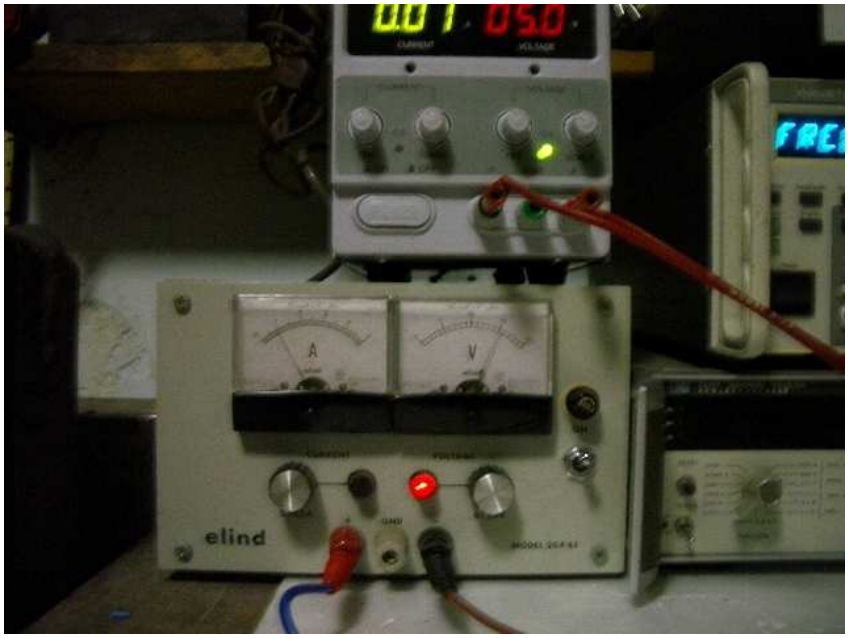
Test Bench

What is shown is the up-mentioned setup in operation at a selected sweet point i.e. the lower oscillator is set 1.4 MHz and the upper at 0,7 MHz (square wave).

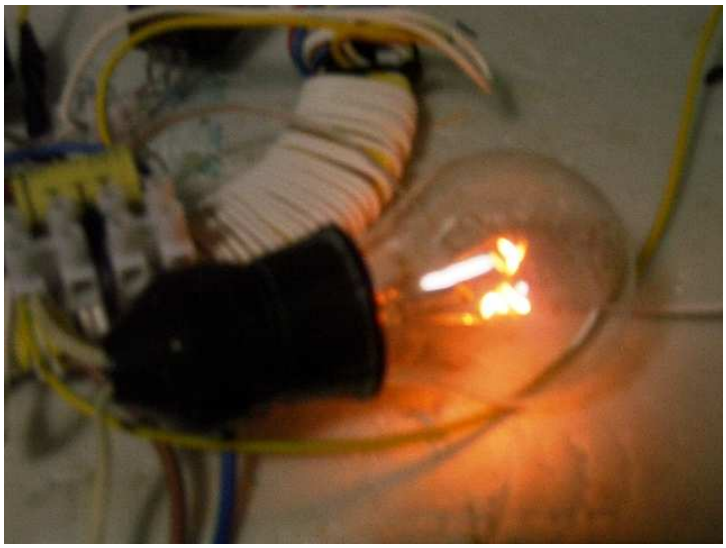
The upper PS is for driving electronics supply and is set to +6VDC @ 0.01A. It does supply only the IRF7307, CD4027 (flip-flop), transistor 2N915.

The lower PS is supplying the Power Mosfet only and in that operational point (1.4 and 0.7 MHz) is delivering +15VDC @ 0,7-0,8A.

- The upper oscillator is a Wavetek 145.
- The lower synthesized oscillator is a Wavetek 288.
- The HP instrument seen under the Wavetek 288 is an HP frequency counter.
- The oscilloscope is Tektronix dual channel 100MHz bandwidth.
- In the test-board there's only the driver circuits with the IRF7307, CD4027 and some other things not used.



The Output Collector Coil is directly connected to light-bulb lamp (60W/220V). The lamp does appear with filament bright white …but not with full brightness (P.S. does show +15VDC @ 0.8A).



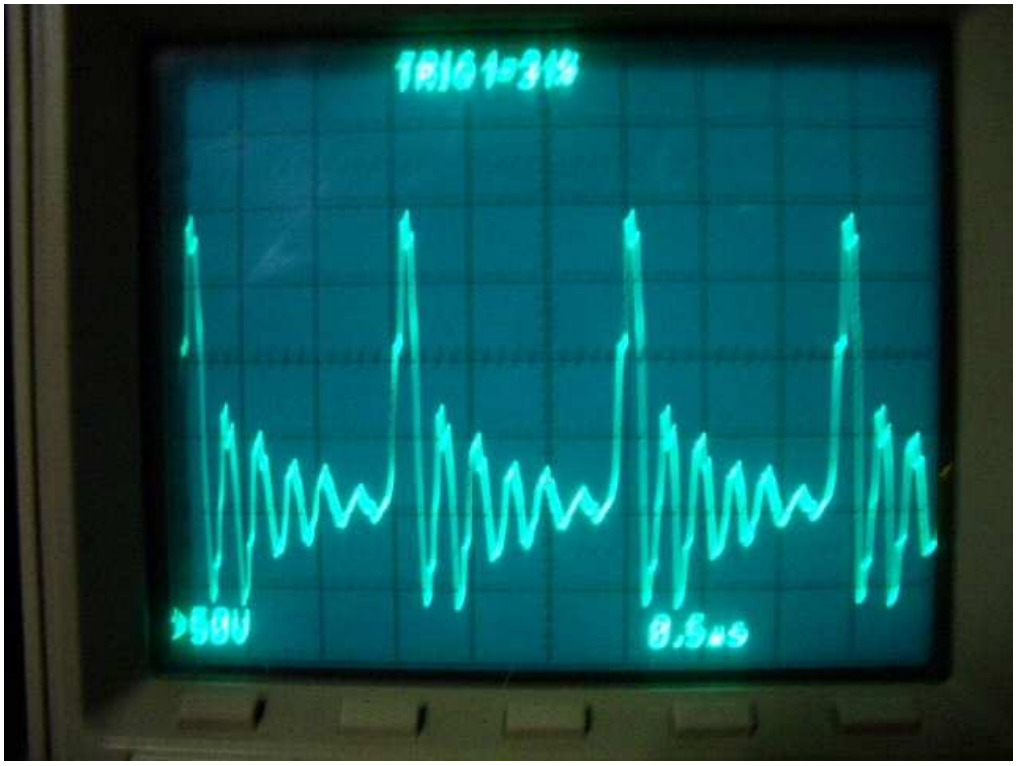
Please note the 10 microF yellow polyester capacitor put on big brown and blue leads just on top of ring. The driver electronics is put on the breadboard on the right.

The scope probe is hooked to bulb.

Please do note that in this photo I were not using the flip flop…that's the reason why there are 2 external oscillators.

5.1.1 Comments

Reviewing the waveforms obtained on load it struck me the evidence of this one which seems to be perfectly aligned with the already proposed & well accepted theory about SM TPU.



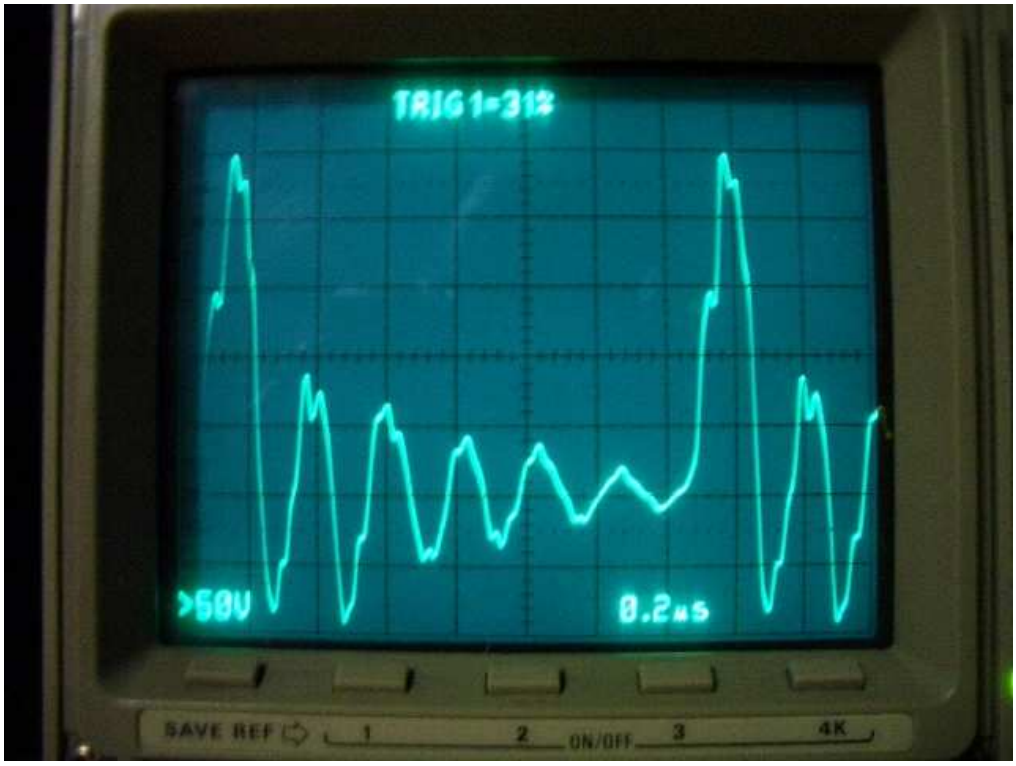
It seems been created by art (the zero level is just the 2 cm over screen bottom, the scope is set on DC input); the big pulse freq is about 1,4 MHz amplitude 250VDC; the damped oscillations are about +120VDC @ about 5 MHz.

What is nice is that the ‘waveform itself’ is absolutely **clean & stable & repetitive**, this condition is met only with the up-mentioned freq.....if you don't set them correctly (there’s a good window of only few hertz....so you need a synthesized generator...) you don’ get anything but trash.
Of course you have to optimize the two freq according to the inductance you have. In my case as I wonted to see quick a results I choose to use low inductance (less than 10 microH per control coils).

You can optimize the 2 frequencies (first and second harmonic) almost where you want providing a suitable set of coils. (please note that after initial discovering, I used only one oscillator and a flip-flop divider to get auto-synched waves).

I don't see relations with the ring diameter (18 cm inner - 21 cm outer border) as the wavelength associated to 1400 KHZ is far distant.

Here it follows a more detailed picture in a more favourable conditions that led to: almost +350VDC peak and 180 VDC for the 5 MHz component.



Has easy noted, the waveform is STABLE & REPETITIVE.

In fact here we have:
1 – A very big kick (+350V)

Excerpt-1:
As the moving magnetic field intersects a wire at 90 degrees the familiar kick will emerge.
Excerpt-2:
If you place copper in a rotating magnetic field one of two outcomes will happen. The copper will be physically dragged along with the moving magnetic field, or if the angle intersects wire at 90 degrees you will produce an electric flow. You get torsion or EM and the two are not the same.

2 – The kick appears followed by 5-6 sinusoidal 5 MHz wave.

Excerpt-1
If you stretch this pulse out on your scope you will notice a series of sine waves at the NMR frequency. Maybe about 6 sine pulses at approximately 5 Mhz.
Excerpt-2
Copper will act like a magnet at the Proton layer and it will follow a moving magnetic field, precessing around the polar alignment. These NMR pulses were discovered in the 50's by a nobel prize winner, and then abruptly forgotten.
Because the Proton will lag the turn of the magnetic field due to its higher mass we get a dragging effect from that layer that pulls the electron shell into a negative or dragged state. Induction lags in time frame, and the NMR rate is the factor by which it lags.

3 – I'm using a 90 degree pulsing coil.

Excerpt-1
The TPU would seem to be turning the magnetic field in the copper atoms, using 90 degree pulsing coils. To make it turn completely over takes only a synchronized pulsing scheme. The magnetic field will rotate its poles through the collector wire loop. As the poles cross

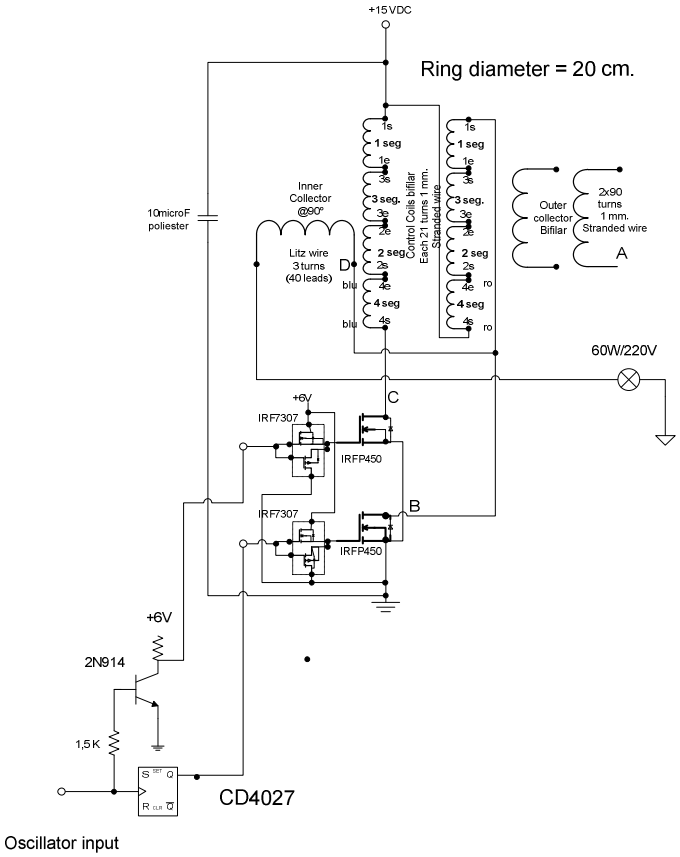
the wire no current will flow and energy will move into the torsion field, as the magnetic field moves past the 90 degree angle with the collector wire the energy will shoot into the electric field and the series of very high pulses will be shot down the wire as it crosses.
The TPU is embedded in cork to stop it from vibrating to pieces. Each time the magnetic field moves between the torsion state and the Electric state it creates a small jerk and makes a physical motion of the wires.
The TPU exhibits an inertial momentum, or gyro effect because its Proton layer is in a spinning motion of its magnetic poles, this creates a "forced precession".

Anyway in the actual setup the effects are of course similar to that previously described because there is always the copper charging effect on Outer Collector due to Kicks & clashing rot mag fields.

5.2 Load connected to Inner Collector coil

After suggestion coming from Gn0stic I did several efforts to check this new condition named by Rich as: '***the other way around***'. At first time I did not succeed as I connected the inner collector with wrong polarity. After some days I tried again this time reversing the inner collector leads and this time I had a **big output** and this leaving the Output collector leads '**opened'** as in figure.
Sweeping the frequencies range (200 KHz – 2 MHz) the bulb is <u>always at least red but at some spots it reaches a bright white.</u>

It follows the updated schematic.



TITOLO: TPU V4 Magnetic clash test		REVISIONI 1.1		**Inner Collector:** @90 deg. Respect to CC. 3 turns Litz wire **Control Coils**: Bifilar contro-phase connected, each 21 turns, each side is connected as per 37021 pat.
DATA ORIGINALE	SCALA			
ULTIMA REVISIONE: April 16 2007	N. LAVORO	VERIFICATO: ronotte	DISEGNATO: ronotte	

In the following picture the waveform is taken <u>across the light-bulb load</u> connected to Inner Collector.

The zero level is the screen bottom, the main peak amplitude **@50V/div** is almost +300VDC.
It is possible to see that:

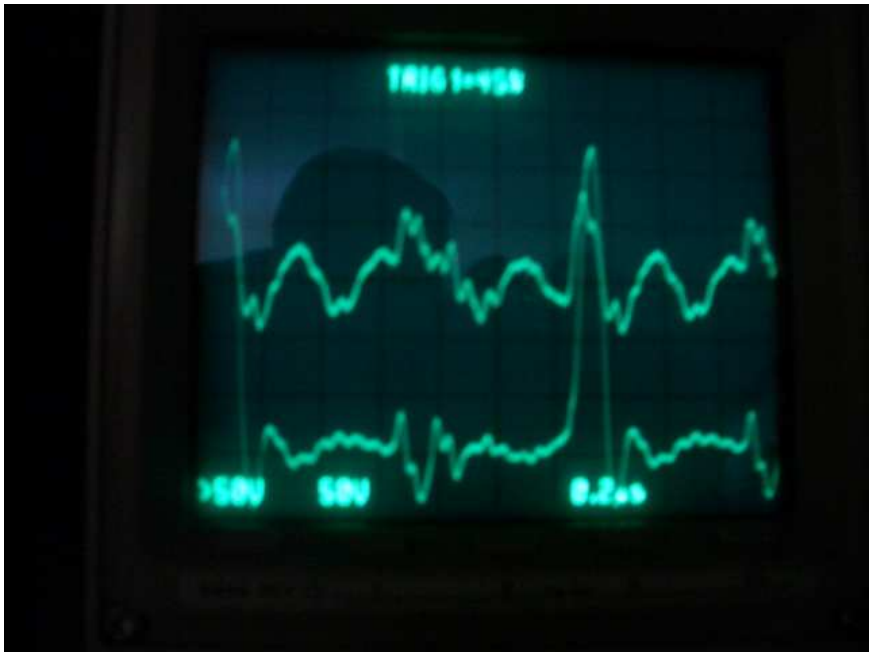
1. The peak wave itself does appear ‘different’ from the previous one.
2. Lack of 5 MHz component.
3. Base line is trash but does have a variable positive DC value.
4. The central component (on base-line) has no meaning as is probably provoked by an artifact on the input signal coming from driver circuits.

Waveform on Inner Collector Coil under light-bulb load (50V/div)

Just have a look at ‘**the growth curve’** it is really different from that obtained in ‘the other way around’!

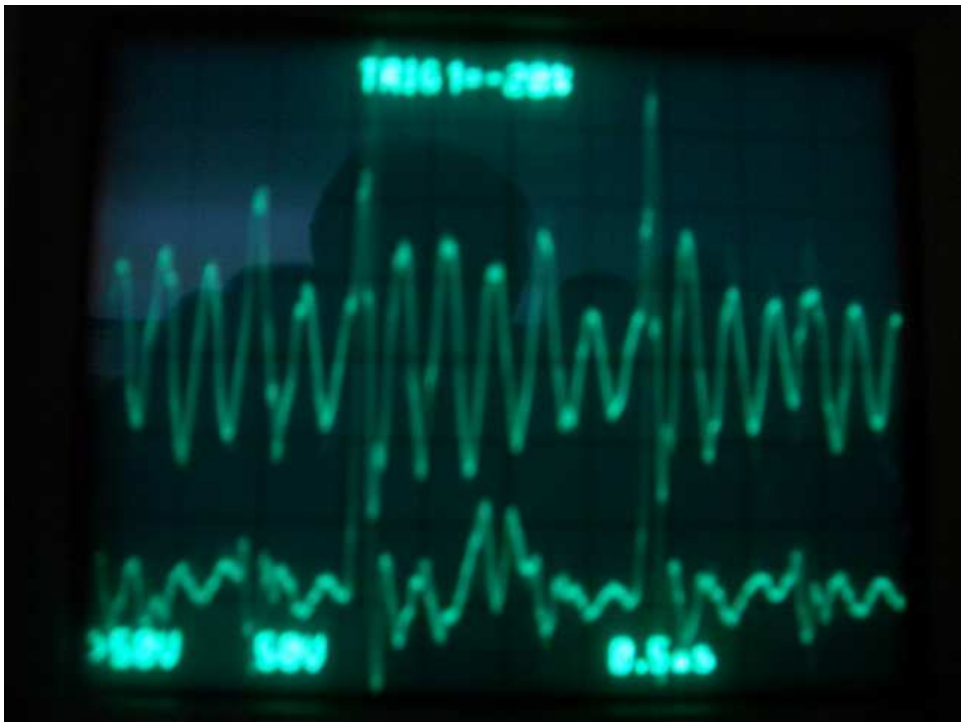
There are Vibrations.
Actually during operations I’ve heard vibrations coming from the device. The vibrations are of ‘high pitch’ and small amplitude: you have to pay lot of attention in order to hear them!. Considering the high frequencies used to drive the TPU (700 – 1400 KHz), the vibrations in audio range are to be considered just a **by-products** and in my opinion are produced by the jerks forced on inner collector wires.

Just for reference it follows the comparison with the waveform seen on Output collector coil with open ends. You can read about 120 V



Comparison between Inner Collector loaded and Output collector not loaded

Removing the light-bulb (on inner collector coil) here's the situation:



Comparison between Inner Collector not loaded and Output collector not loaded

On Inner collector (lower waveform) it seems that the base line increase in amplitude while the peak voltage rise to well over +400VDC…so just a little bigger than the 'loaded' case. This is really encouraging!.

On 'opened' Outer Collector there is **a strong resonance @1.4 MHz with continuous sinusoidal waves of about 200V peak**.

Now one could ask himself: why connect the Inner Collector to MOSFET's drain excited by F1 rather than the one excited with F2?. Well it follows a small detailed study.

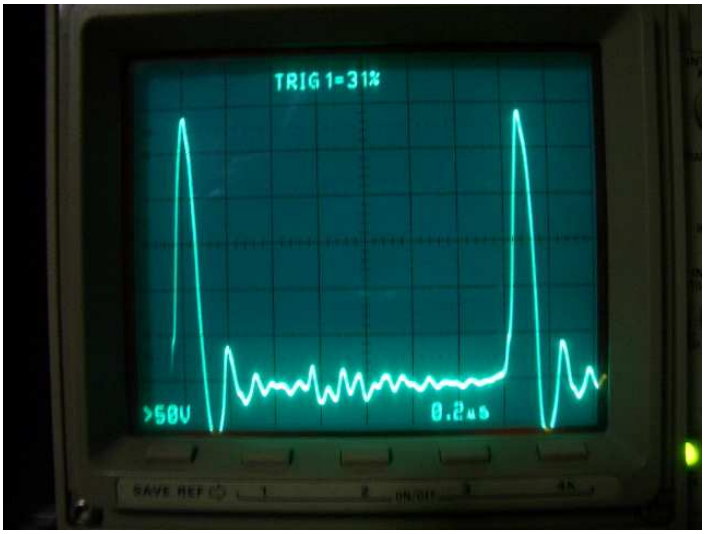
5.3 Comparison of F1 & F2 Inner Collector connection

This is one of my first tests necessary to get an idea to where connect the Inner collector as I had to choses:

- To F1 connected MOSFET's drain.
- To F2 connected MOSFET's drain.

A priori I did not had preferences but I searched a motive/meaning so I conducted the following study.

Connection to F2 MOSFET's drain
In this case I remember that F2 is the lower frequency i.e. = F1/2 so F2 for this case is 0,666 MHz.

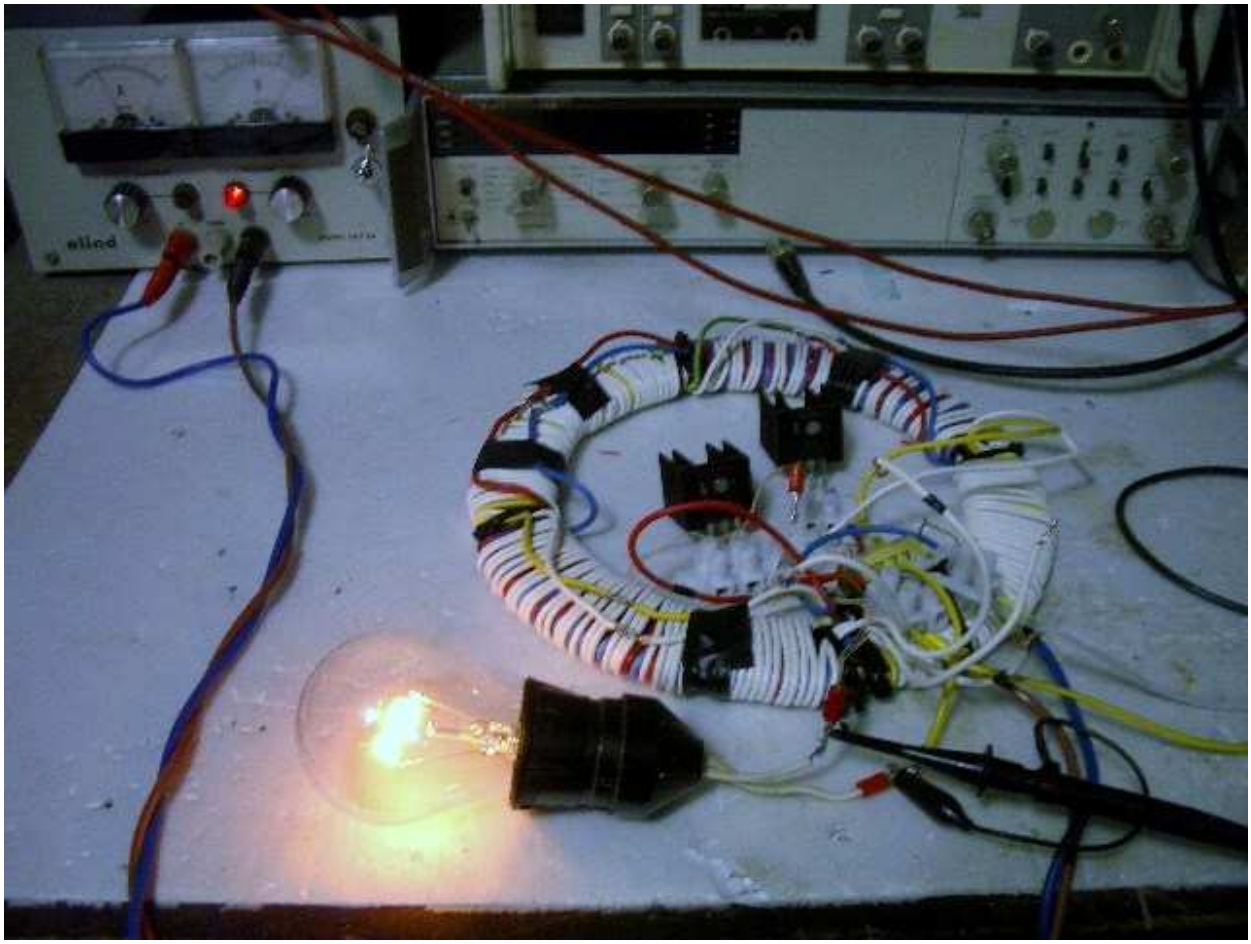


Waveform on light-bulb – IC connected to MOSFET's driven by F2

In this picture the zero level is one division over the screen bottom, so we have about 280V peak on load; on the base-line there are :

- Some remnant of the NMR 5 MHz component.
- Some remnants of it's first harmonic.
- Small noise from the up-mentioned signal heterodyning.

It follows an image of the actual setup showing also the lamp brightness achieved while pumping the input Power Supply voltage to +18VDC @1.5A.

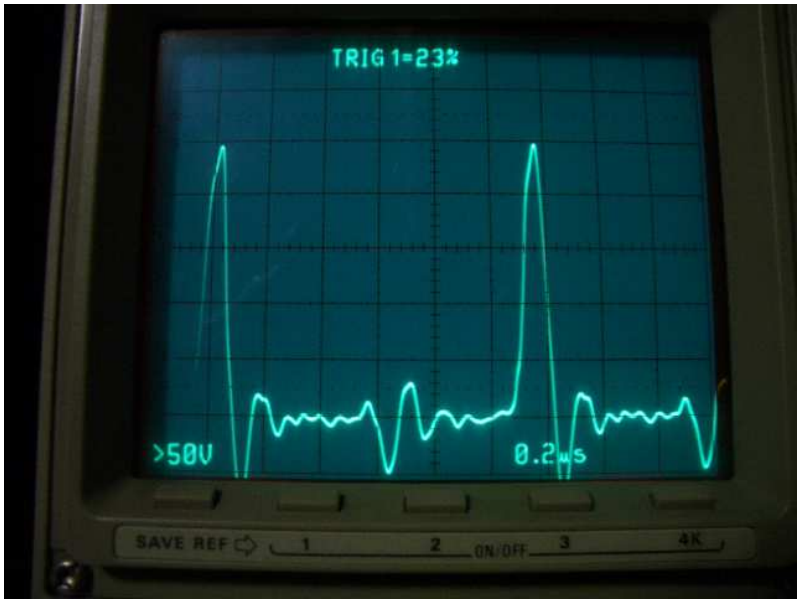


Test bench with actual setup (Inner Collector on F2 MOSFET)

P.S. reading (18V @1.5A)

Main Oscillator settings (1.33MHz)

Connection to F1 MOSFET's drain
In this case I remember that F1 is the input frequency from the Wavetek oscillator, for this case is set to 1.33 MHz.

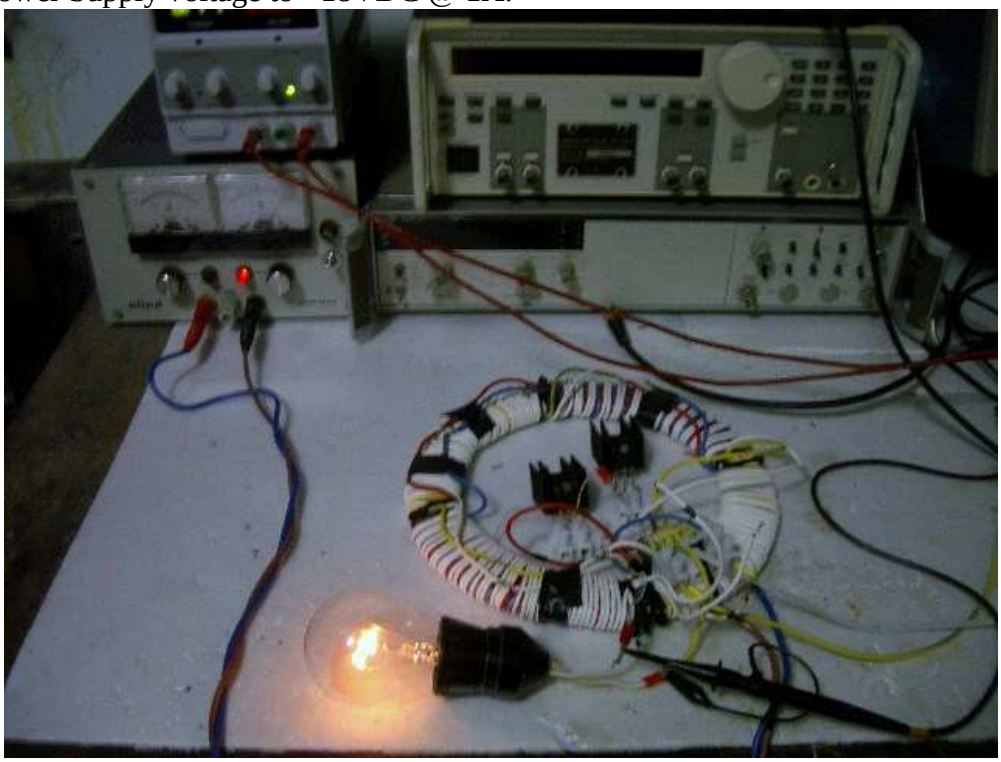


Waveform on light-bulb – IC connected to MOSFET's driven by F1

In this picture the zero level is still one division over the screen bottom, so we have about 250V peak on load; on the base-line there are :

- Lesser remnants of the NMR 5 MHz component.
- Lesser remnants of it's first harmonic.
- Noise from the up-mentioned signal heterodyning plus an artifact.

It follows an image of the actual setup showing also the lamp brightness achieved while pumping the input Power Supply voltage to +18VDC @ 1A.



Test bench with actual setup (IC-F1)

P.S. reading (18V @1.0A)

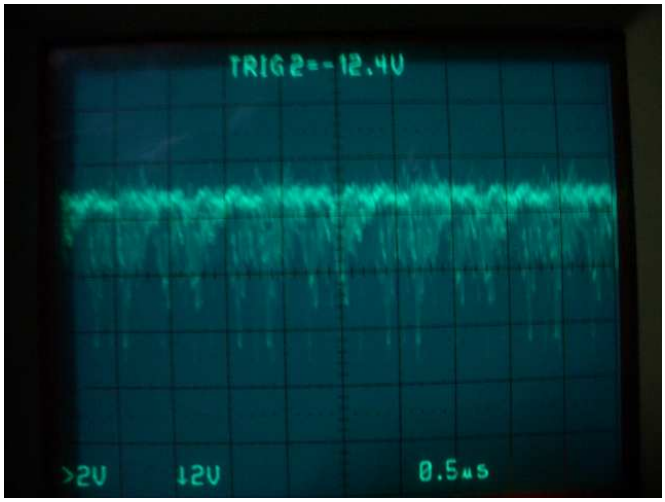
Main Oscillator settings (1.75MHz)

Conclusions

As is easily observed, there are not special motivation to chose either. Personally I prefer the second solution due to better delivered/absorbed current ratio as the observed little diminution of brightness is overcompensated by the far less current requirement!.....but I may be wrong.

6 TENTATIVE POWER MEASUREMENT

I've tried to get just a rough idea about the 'black-box' input/output power, so in order to evaluate correctly the input current delivered to black-box I put a 2.1 ohm 20W resistor in series to + PS (18V) lead. In following picture (2129) there's the voltage taken differentially with two probes (0 DC level is on screen centre).



Voltage across the 2.1 ohm sensor

So as the medium voltage read across resistor is just over +2 VDC then I = 2/2.1 = 0,95 Amp that's the output current delivered to ring.

- P = 18 * 0,95 = 17,1 W that's the delivered power to ring.

A second try to check it is as it follows:
I disconnected the resistor (reconnected + lead to PS) and read on PS panel meters that the current is 0,85A @ 18VDC, so the power delivered to ring is 0,85 * 18 = 15,3 W which is near (!?) to what measured in the other way. Anyway as you see there's a difference.

The output power measure, due to necessity to have correct instrumentation, will be done in a next step.

7 INNER COLLECTOR SHORT STUDY

As the Inner collector @ 90 degree is the KEY to TPU and I've one under my hand I've took the occasion to make a little survey on Inner collector comparison Vs Outer Collector, here are the results.

Please consider that I wanted to see the Inner Collector waveform only, so I've had to **disconnect it from the MOSFET's drain and from the load**. So the following is related to the only inner collector coil with the two ends left unconnected, same for Outer Collector.

In following picture you have the inner collector on upper trace and the outer collector in the bottom trace. the zero level is respectively on the screen centre for the upper trace (coincident with the waveform bottom) and 1 div over the screen bottom for the OC.

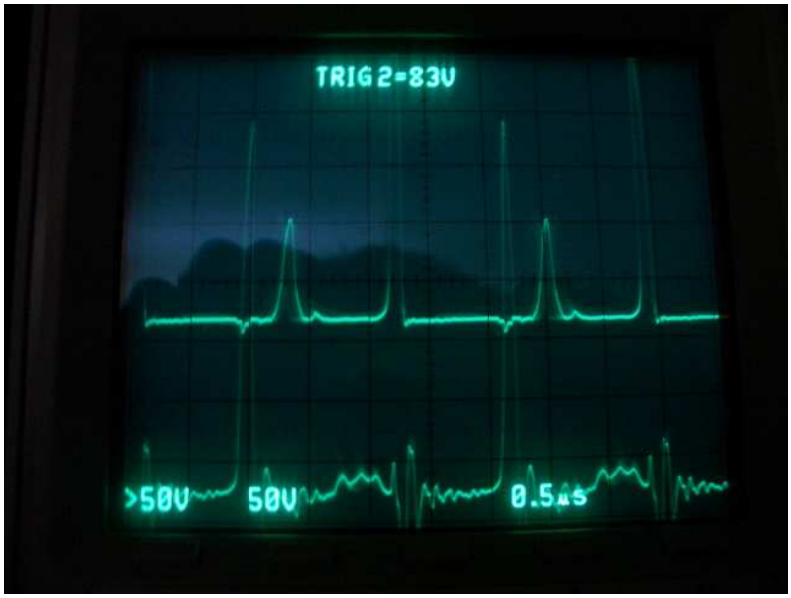
Of course leaving one end free here you see that the voltage (for outer collector) went over the screen I think about 700 VDC. Max 'Inner Collector' peak voltage is in this case about **+ 175DCV**.

What is intriguing is the coincidence of one inner collector peak with the main peak of outer collector,

Inner collector does not show any 5MHz component: there only DC and an artifact on base-line.

Inner Collector Vs MOSFET drain @ F1

Comment:
it's possible to see a perfect correspondence; its clear that the main pulse is in correspondence with the F1 MOSFET drain.
Again I tried to disconnect the F2....then all goes to ZERO....so even if it seems that there is no contribution (looking at the waveform you don't seen any F2 presence) really THERE IS!



Inner Collector Vs MOSFET drain @ F2

Finally all pictures are shot with following conditions:

- DCV input to MOSFETs = +15 VDC
- Current supplied to MOSFET = just less than 1 A.
- The light bulb (60W/220V)has medium-high brightness

In conclusion I think that:

1. there is really voltage & power on a piece of wire put @ 90 degrees from control coils,
2. there is ‘copper charging’ effect on outer collector.