

Translated selected posts from [www.skif.biz](http://www.skif.biz)  
Author: MiMo and others

## TPU

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## Foreword

I would like to present you one of most interesting and misterious devices I have seen.

Michael (?) (MiMo) was researching and trying replicate Stiven Mark's TPU.

He used ferrite rings with antialigned fields for creating superstrong electromagnetic fields in local collector region. These rings have two opposing windings that were "dispersed" in resonance. At the same time magnetic field was "squized" out from ferrites and form a narrow beam outward.

This beam of very strong field helped run phonon process in the collector. Further acceleration was performed by coils that were fed from SCRs controlled by PIC MCU.

After experiments with achieving divergent process, his health deteriorated rapidly, so much that he almost died and was recovering months after the incident. After that he deleted all the posts and wrote that no one should deal with this topic.

Somewhere in six months people persuaded him to resume this work, and Michael has organized forum (already located somewhere in Canada). There he organized mainly develop and manufacture secure test box for TPU with tests on a remote basis using telemetry.

Forum lasted several months and work but stopped supposingly after outbreak of nationalist riots in Moscow. Michael said that he no longer wants to have anything to do with the Russians. At that his mission and all work on his TPU version stopped.

In this file collected posts and pictures from different people during replication process which was coordinated by Michael. Unfortunately the replication was interrupted and we still don't know exact construction of his device.

## Early version

Let's do it in order:

1. Choice of materials for the collector.
2. Design of the device
3. Schematic for the device tuning
4. Theory by EOC

## Materials

1. It is better use materials for the collector which have magnetostriction effect (easy available - stainless steel, permalloy) as well as can be nickel, Invar, permendur, monelmetal.

But if you can tune things well, you can use ordinary copper. In my installation I am using stainless steel wires. Diameter 0.8 mm, 5wires. Each wire was lacquered, and then the wires were consolidated into a bunch. From this bunch of wire collector was made.

Stainless wire can be purchased at any construction/hardware store etc etc. It is desirable to pressurize bunch of wires. But I tightly wrapped this bunch of wires with ftoroplast ribbon (1), while the paint is not completely dry and was still sticky.

For dual-phase coils passive circuit I used a soft steel insulated wire diameter of 2mm, which is used by builders for binding reinforcement. I just bought it in the hardware store. Capacitor for this circuit a metal tubular shape with glass insulators for voltage 2000v ( about choosing capacitor will discuss later ) . The control coil is made of enameled wire diameter 0.71 mm.

That's all for materials.



Pic1. Ftoroplast ribbon

## Design

Just want to warn you that you will not see a working sample, it is now about 1000 km from me. EOC conducts a series of experiments with it by my request. Device come back to me in the autumn. Yes, you will see nothing on it's photo. It is packaged as the SM's TPU. Yesterday I made a model that fully reflects device structure. Except that instead of stainless wires I used copper in collector (for convenience, quick assembly).

See photos: (\* missing)

Explanations for the pics : Design of collector same as Otto and Roberto have. The collector wires are placed in a transparent tube connected in the same way as in the Otto's device. Difference is that the first and third control coils are replaced by two single-row passive coils which are wound in the opposite (one clockwise other counterclockwise) . Connected in parallel and soldered in parallel to a high voltage capacitor. In the pictures capacitor is fake (polypropylene will not work), here need mica or at least metallized. On the number of turns of the coils I will not say now (will see during tuning). The pulses are fed to the second control coil, which is placed symmetrically relative to the center of the passive coils. Diameter of collector rings same as Otto's. That's all about device design.

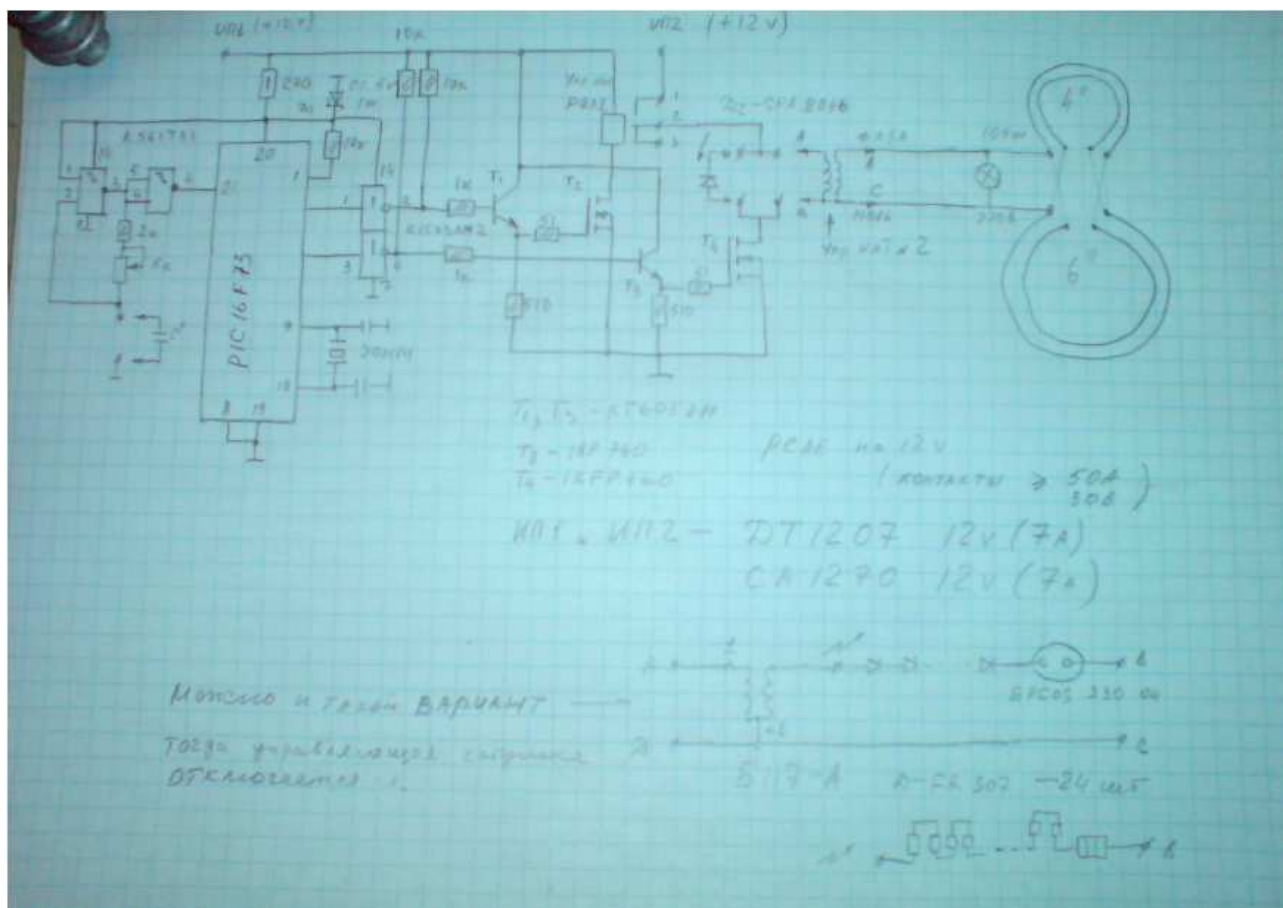
## ***Schematic***

(see below)

From the figure is clear, but nevertheless I will explain briefly. The control circuit and the output part powered from different power sources. 561TJI1 (4093) is conventional generator of rectangular pulses. Rectangular pulses are fed input to INT (external interrupt) leg 21 of PIC16F73 microcontroller. Front edge of each pulse generator generates an interrupt controller. The procedure interrupts can regulate the ratio of pulses generated by the legs 12 and 13 and their duration. Further it is obvious from the schematic.

On the bottom shown a version with ignition coil, in this case, the control coil 2 is not used. If there is no spark you need swap primary wires, etc. In general, is not for me to teach you.

All other details and the software later when tuning. Now about instruments. I use dual channel oscilloscope C8-17. Multimeter Victor 96A and a photomultiplier tube with homemade opto cabel. Oscilloscope is powered by a rechargeable battery 12V 55A through a voltage converter. I have no device powered from mains.



## Theory

Now the most important, item 4.

Understanding of the processes occurring in the collector from EOC. Searching for something without understanding - it is simply wasting time. So be very careful and understand in this matter thoroughly. As clarification of this material you will understand work of Floyd Sweet, Róisín - Godin, Searle, Kazakov, etc. The phenomena occurring in their devices, the same order.

So, where to start?

Keyword here is Kinematics. This process has purely kinematic nature, for this reason it is valid for waves of any nature, I repeat, of any kind. In our particular case we are dealing with acoustic waves that propagate in a certain way in collector. And so, you can create such conditions that the in collector (media of these waves) formed a shock front. This phenomenon is well known in acoustics: An object moving at a speed greater than the speed of sound in the medium of its propagation, overtaking it created a pressure wave and reserves the race the pressure as "Mach's cone".

Example: movement of the aircraft at supersonic speed. You may not agree with me that this phenomenon occurs at supersonic speeds. That is the condition  $v > c$ , where  $v$  - speed of the object,  $c$  - speed of sound in the medium. Really reasonable question arises: Is it possible to form a Mach cone (ie when the secondary waves are coherent and thus adding them to each other and to the incident wave is formed refracted wave ) in the uniform motion of the object in the environment at a speed of less than or equal to the speed of sound? Since only the motion of an object with an acceleration can generate a shock wave. The answer is that it is possible, because for a shock wave is important not to change in the speed of the object, and change attitudes that speed to the phase speed of sound. That is, if your media (collector) along the path of movement of the object to change the parameters of the medium (important point) shock wave is formed.

I see already skeptics "object, object, you tells us obvious facts" Reasonable. So who or what will serve as a moving object in the collector? In nature there is such an object. This is phonon. Quasiparticle.

Problem setup:

1. Create Phonon collector
2. Change along the path of movement of the phonon media properties
3. Provide conditions of sustenance of the shock front in the collector when the detuning parameters such as a change of sound velocity in the collector depending upon the temperature.
4. Maintain circulating motion of the phonon at the collector in one direction.
5. Maintain conditions of nonstationary perturbation of the medium.

A small note. That's why we chose the material for the collector with the magnetostriction properties. Because shock acoustic wave having kinematic properties , it will change the linear parameters of collector, which in turn will lead to the formation of the shock wave of the magnetic field ( coherent processes will generate processes with similar properties ) due to the inverse magnetostriction effect . Of course, the collector will be yet another parallel process. This stimulated the movement of electrons caused by the incident wave. (we just secured ourselves)

And yet, as is often said EOC "run phonon generator and there and yes phonon mover at hand and will then surf the air ocean melodious murmuring vimaana." But it's the lyrics. According to the theory of fundamental physics, read Tamm Aerospace works, Cherenkov etc. Information on this topic available. These five points are the vector in the direction you want to pursue their studies in

this field. Implement in practice, these five points, we get, as you say OU .I hope we finally unite our efforts towards the realization of this project.

Tell me who, what, where found in this direction.  
4 item to be continued ...

Enough to provide all five conditions proposed by me and can be selected portion of the energy of the vortex with a flat coil, which can be loaded with a regular incandescent bulb

(Record on a computer at this post, then submit to me as a “physical evidence“).  
Sincerely , Michael .



Mach cone

## How to build TPU

### *Experiment*

Michael: To begin, perform a simple experiment. Take a piece of copper wire with a diameter of several millimeters and a few centimeters long. For example, the bite from a soldering iron to 40W, which was not used in the work. Hang it on a thread. Connect to this piece of wire oscilloscope probe. Do not connect ground of the probe. Set sensitivity about 1V/div. Sweep length does not play a role. Pick up a scalpel and draw a sharp scalpel along the copper piece of wire holding it perpendicular to the axis of the wire (the handle of a scalpel should not be isolated) . Watch the oscilloscope, what you see on the screen? If there is no clear picture, then adjust the duration of the sweep. Who can, please take a picture image observed from the oscilloscope screen and post in this thread.

--snip--

X: I have no opportunity take photo now. I made experiment, clearly can see noise and the motion of the knife along the piece creates spikes “going wild”. I use a piece of brass tubing 6mm.

-- snip--

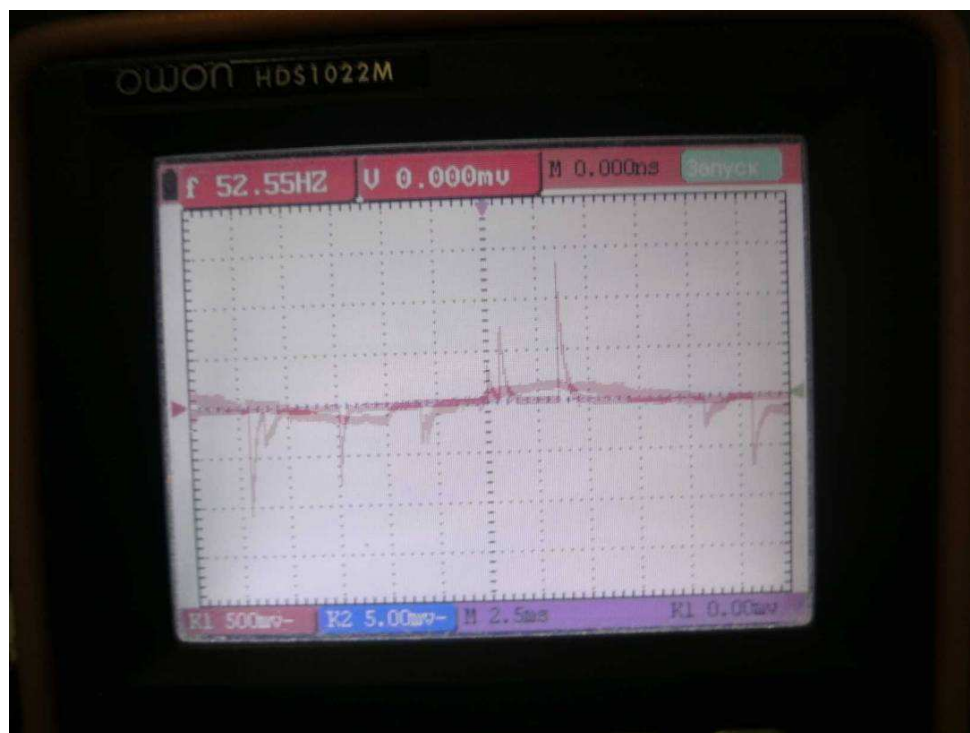
Michael: All right, but still need to fix these spikes on the photo.

PS You will make the device with your hands, I will only help and suggest. Publication of the next step will be to carry out only after you follow the current step.

-- snip--

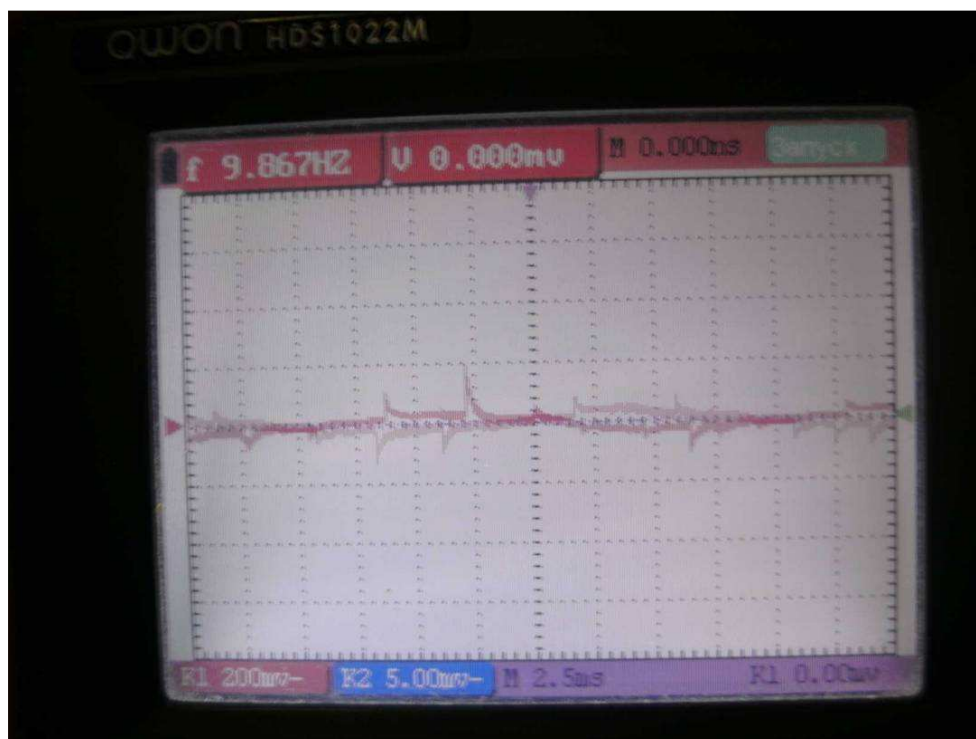


Kvr09:



Michael : Now isolate the handle of the knife and repeat the experience. Publish the results of the experiment.

Kvr09:



Michael: kvr09, your photo acceptable, let's use them. Now a bit of pondering what kind of effects these are? I beg to state your assumptions. Try not to limit your imagination by stereotypes. Present your arguments, no matter how ridiculous they are.

-- snip --

X: Tried on steel, copper and tin. Copper give biggest spikes. Spikes come from any metal, from knock or scratch.

-- snip --

Michael: Of your posts that is not enough information yet to make definite conclusions of these experiments.

X: Tried scratching copper pole of the old mains plug. Intense bursts observed significantly superior level of mains interference. Associate them with runoff electrical charge from the body to oscilloscope probe, as when grasping hand land they almost go away and do not exceed the level of mains interference. Frequency of spickes apparently associated with the roughness of the metal surface. Sincerely

Michael: You're right, I wanted to hear this. Ok, forget it.

## Coils driver

Michael: Then we drove on. Let's build module according to the following schematic shown in the photo. Build module on PCB (it will be useful to us in subsequent experiments).

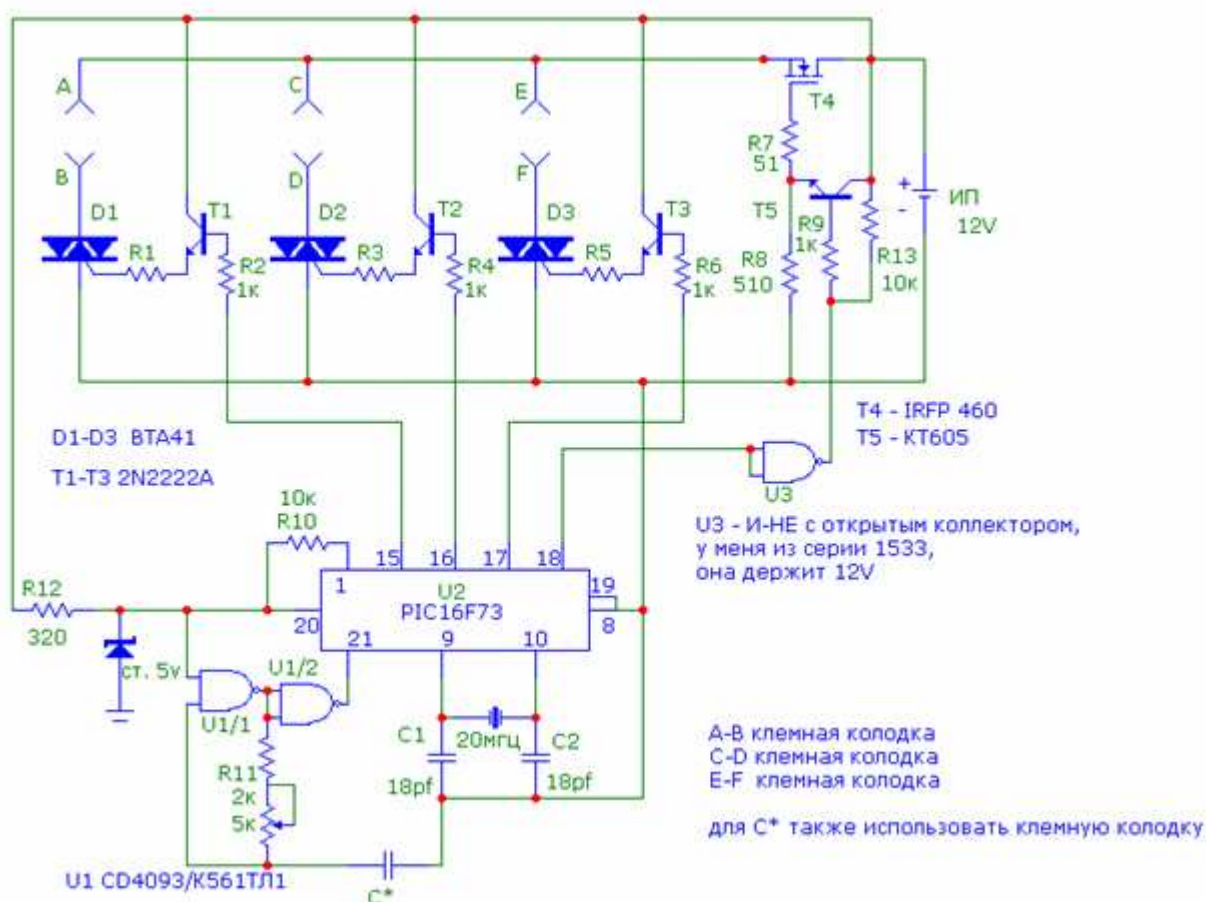
Thyristors can be any type KU202N, BT15H, VT13H, MOSFET any close in characteristics.

The remaining transistors are also at your convenience (in the style of the ones shown in the photo).

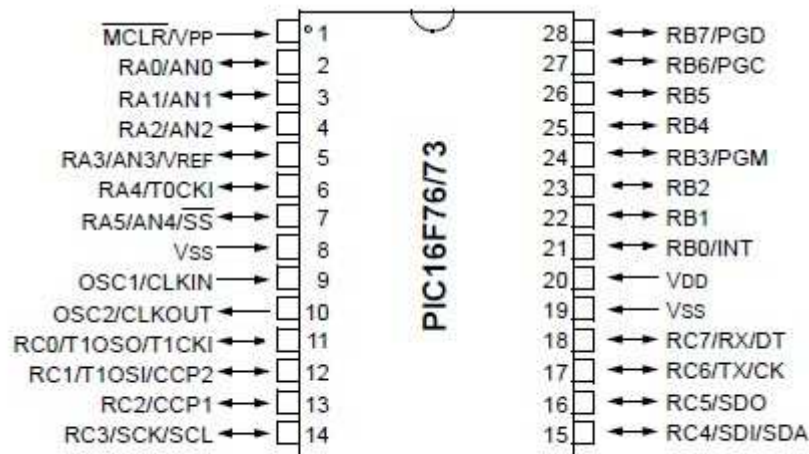
I used what I had on hand. Microcontroller series PIC16HHH with flash memory, the clock frequency of the microcontroller is selected on the basis of duration of no more than 0.2us ticks.

You can use your own types of microcontrollers. I will publish the code and asm- code. Also I will publish simple programmer for PIC.

The program for the controller is not complicated.



U3 NAND with open collector e.g. 7423



Michael: Generally, this concept is just a template; you can improve it on your own, just keep the idea.

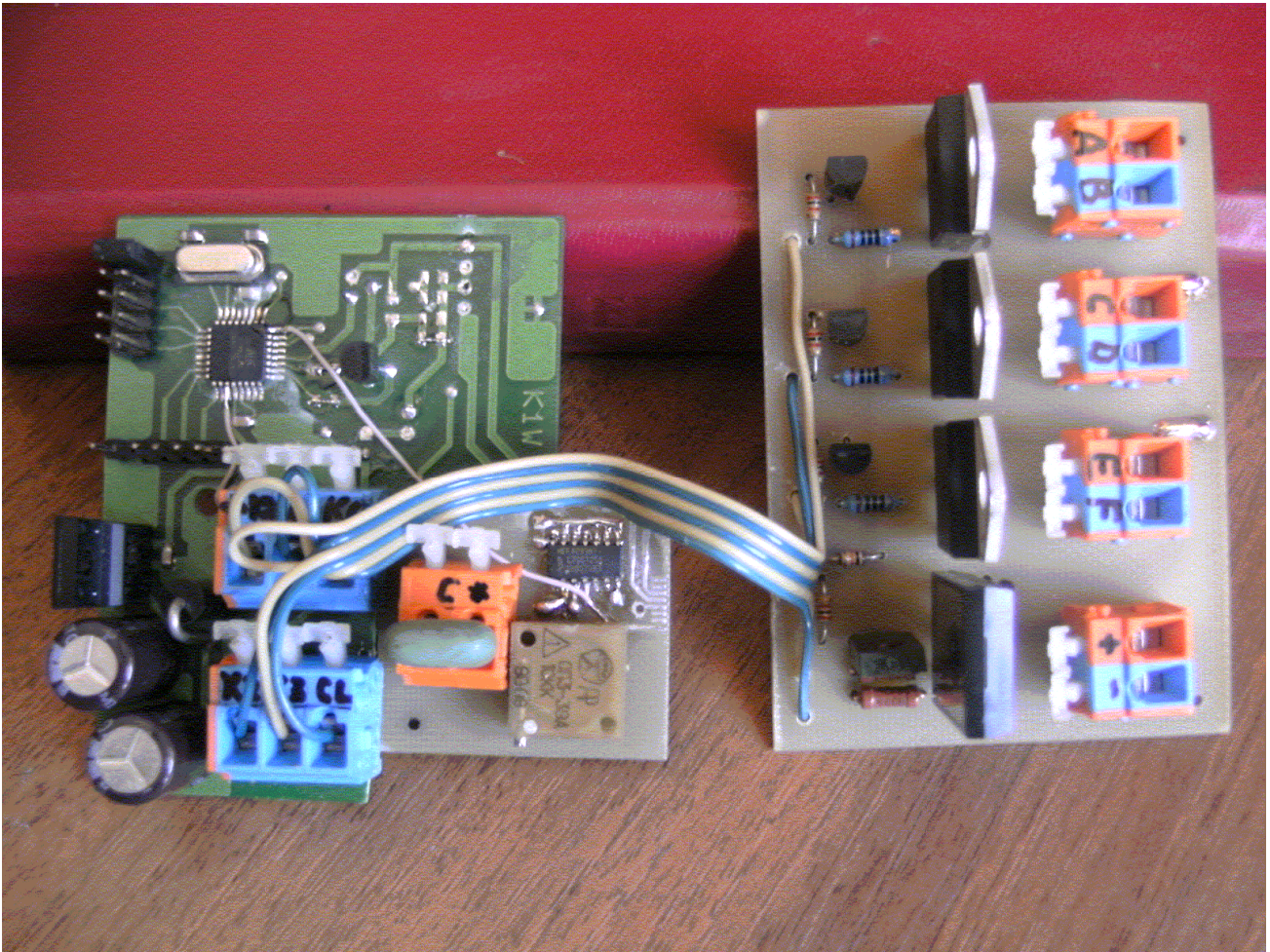
M: Michael, please show me the planned timing diagram: phase with or without overlap, the duration of each phase is proportional to the period, or each key has a fixed duration pulse? Thyristors are necessarily or it is ok use MOSFETs? I already have multiphase driver with IRFBC40, need a switching algorithm to program.  
Sincerely

Michael To M: You have to use thyristors. The algorithm is simple: On the arrival of the pulse from generator assembled on U1 interrupt procedure invoked (on the leading edge or on the falling edge of the input pulse).

Interrupts procedure: "Apply voltage to the gate of T4, after a certain time, the arrival of the second pulse from the controller works D1, then a pause and closes T4. Shift program counter. Exit the interrupt routine"

The next time the pulses arriving at the input 21 of the controller, the operation is repeated, but only opens the next thyristor. And thus in a loop in order D1-D2-D3-D1 Pulses at the output of the controller 15, 16, 17 phase do not overlap





Kvr09: prototype, firmware is ready, will post after debugging

Michael: Problem of any researcher of alternative energy is that it is in their investigations of this energy, thinks traditionally stereotyped. On the one hand, he yells at all intersections, CE exists, but when it comes to practice, he is looking for it in the usual way in the framework of modern electronics.

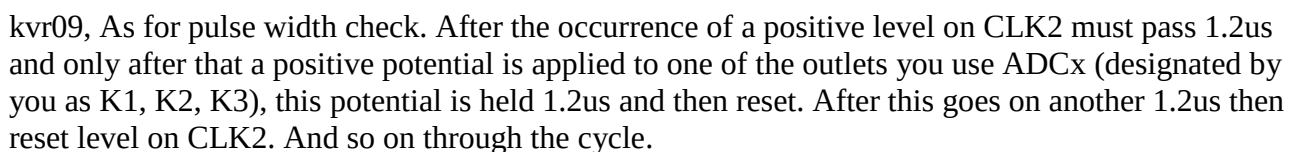
One hundred percent sure that most of you are looking at the concept, will say it's nonsense , in a manner as shown in the diagram, it should not work . Then suggest themselves are legitimate questions. What are you looking for ? Free electricity generated using your converted electromagnetic generators and transformers invented by Tesla , Edison and other scientists ? Why? On this field , you will not find anything . There all the digging done. And underneath it all , has long been placed orderly theory , proved using mathematical tools.

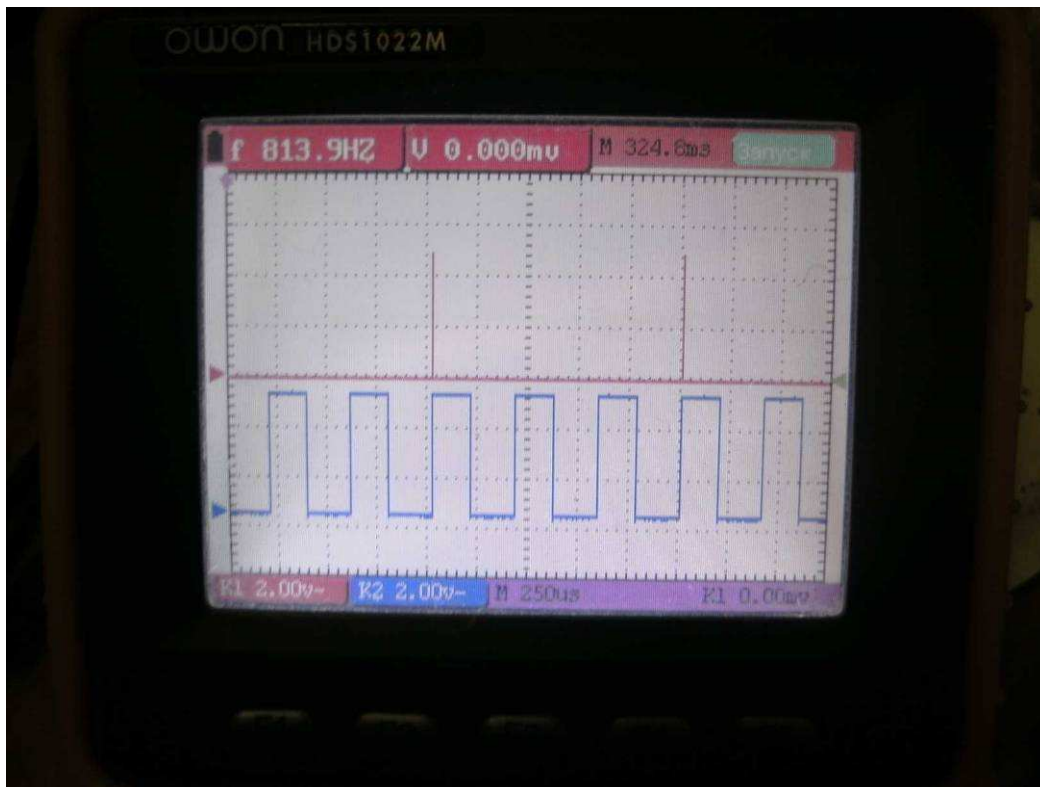
If you're looking for something else? Then do not try to conduct the research by traditional methods and the results of these studies interpreted within the framework of traditional electrical concepts.

Paraphrasing CM will say this: "as long as you have not figured out for yourself what you are looking for, you'll never find anything. You can't look for something not knowing what it is. " Now about schematic I have proposed. I have not tried using this schematic produce energy, the traditional plan energy. The purpose of this experiment was that in the crystalline semiconductor material to form a phonon, which can be detected by means of devices (phonon, we need the following experiments).

First experience, I proposed to you in practice shows how the phonon field, flows from the human body on the scalp, moving along a copper rod, forms bursts of energy sufficient amplitude.

PS: Consumption of this basic scheme should not exceed 30mA .





**kvr09:** Walked with debugger, that's what durations I got:

call ISR 0.55 us  
 apply voltage to the T4  
 0.95 us + 0.4us (NOP)  
 phase pulse  
 1.35 us  
 end of the pulse  
 1.75 us  
 Switch off T4  
 reti

Do I need to increase the duration to 1.2 us?

Michael: As I understood you have length of one tick 0.4us  
 Add one blank operation NOP. On the debugger you will 0.55-1.35-1.75-2.15

--snip--

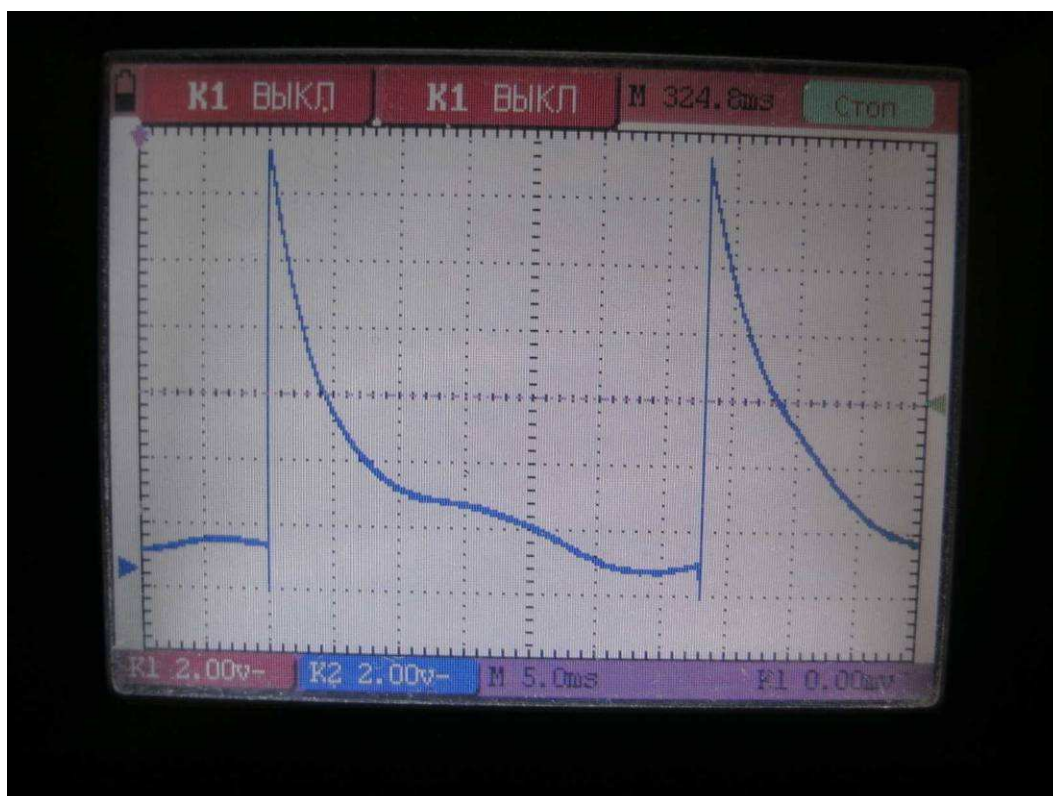
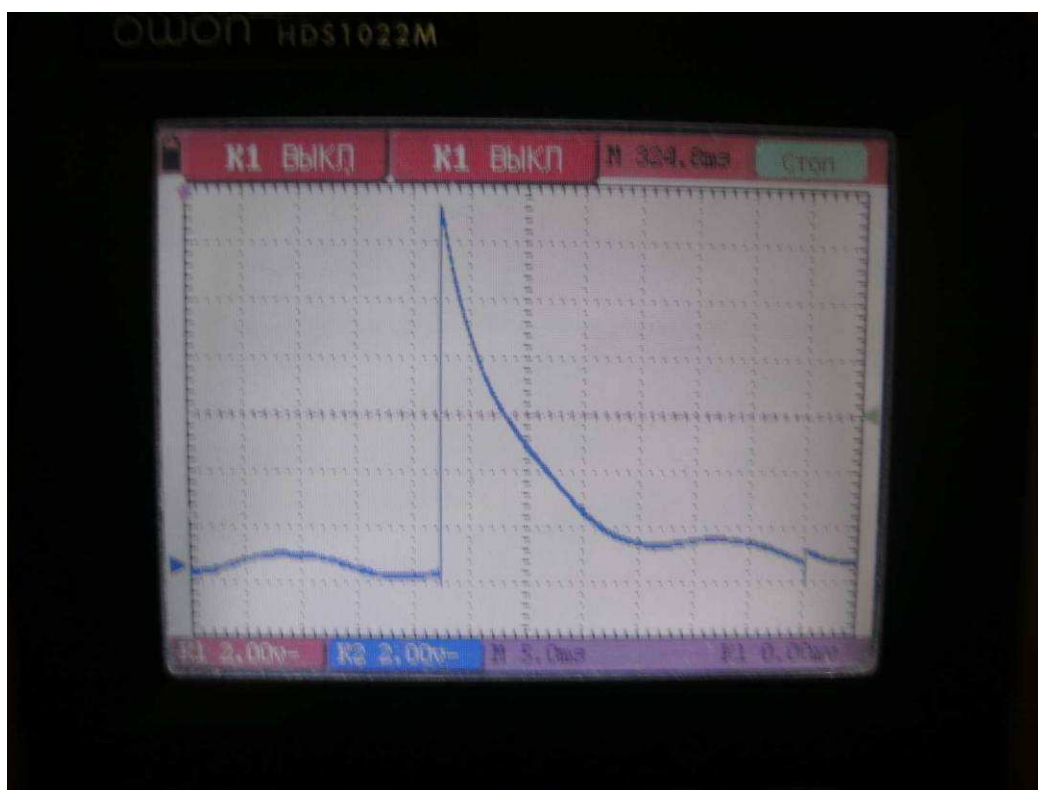
To: kvr09, Recheck the wiring and install the jumper on any of the groups of contacts AB, CD and EF. Capacitance  $C = 3.3\mu\text{f}$  electrolyte, oscillator pulse width max.

The diagram on the oscilloscope screen between the legs of D and S of MOSFET should be approximately the same as in the attached file.

Scope 2V/Div, 5ms scan



kvr9: Adjusted durations 0,55-1,2-1,2-1,2. NOP executed in 0.05  $\mu$ s.  
Capacitor C is 4.7  $\mu$ F, which found. I will inform you what happen. Consumption at 12V 18,3 mA without connecting triacs.





Michael: What is the current consumption?

Kvr09: The resulting curve between D and S on MOSFET. Consumption with three jumpers 18mA. The second diagram after installing three jumpers.

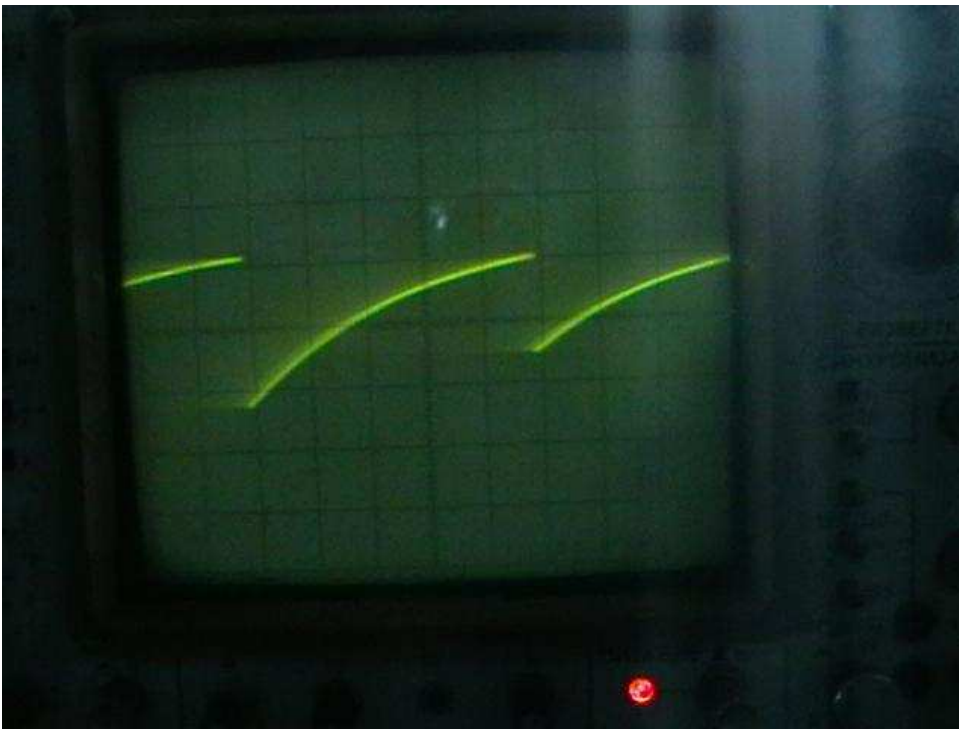
Michael: When installing jumpers consumption remains at the same level. Congratulations to you, you are done! Wait for the results of Igor63 and continue.

Further, we manufacture the actual device TPU. I ask you to help those people who want to repeat your version.

**kvr09:** I understand the transistor T6 and resistor R13 on my circuit entirely unnecessary? Need to fix the scheme or leave it as is but invert control signal T4 in program? I tried increase the pulse duration to 2 us and 4 us, the consumption of the same transistor T4 on such a scheme is not fully open. Or maybe it should be this way?

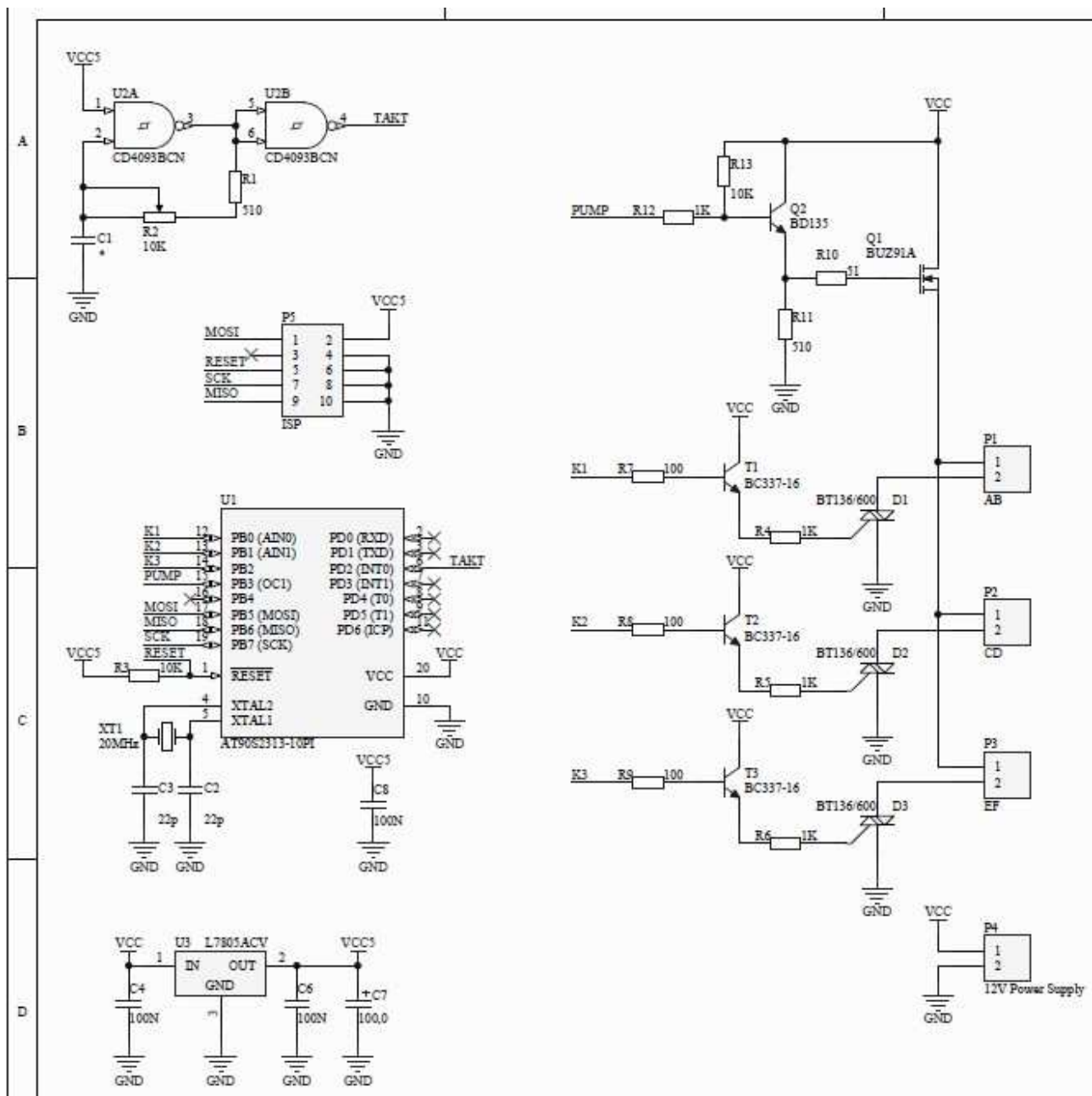
Michael: Leave everything as it is and do not change anything, T4 does not work here as switch.

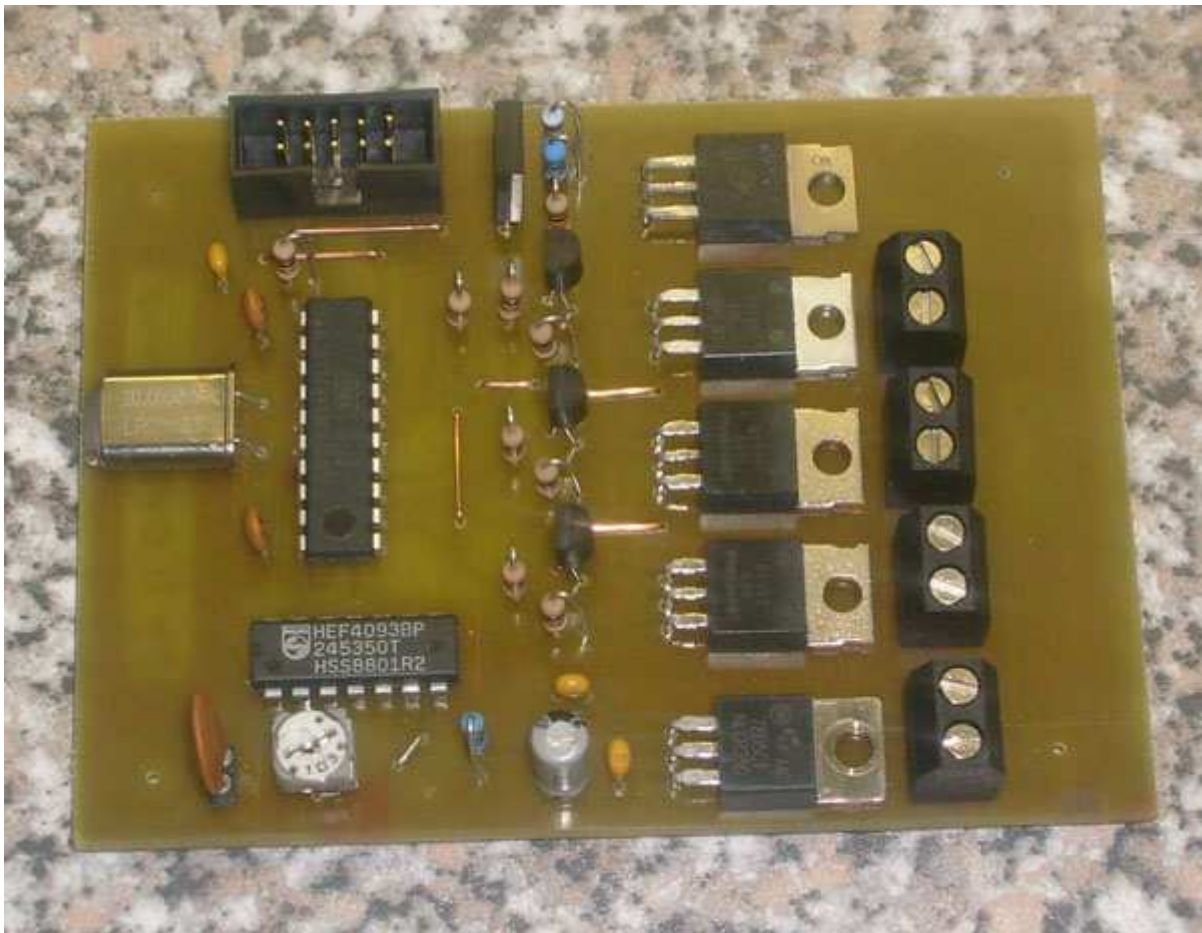
P / S: kindly request only follow what I'm asking you to do and nothing more.



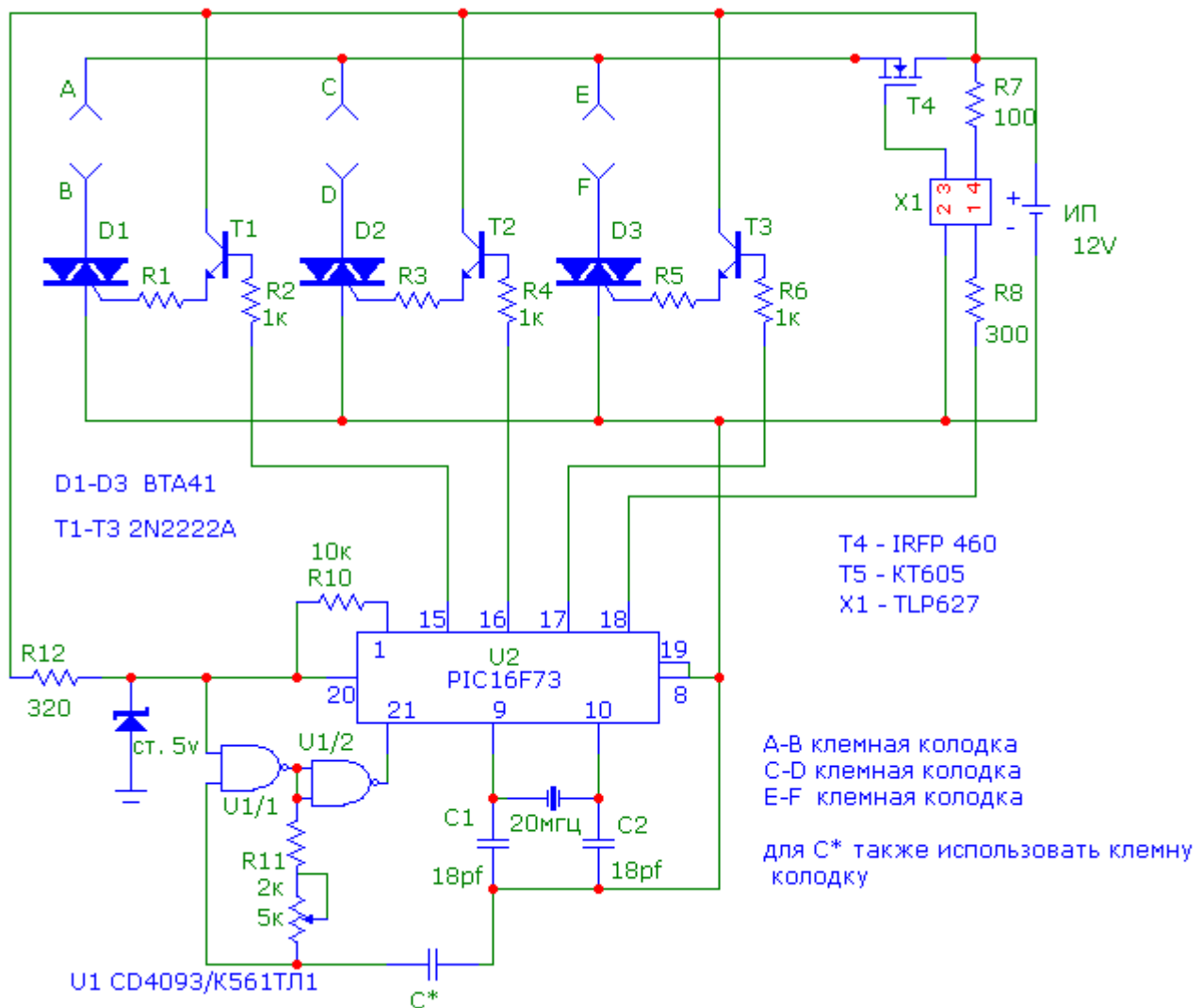
X: Current consumption 8,9mA. On the photo 0,5V/div , scan 5 mS . Signal on T4 is not inverted.

Photos with one jumper. A current consumption is the same one that the three jumpers.



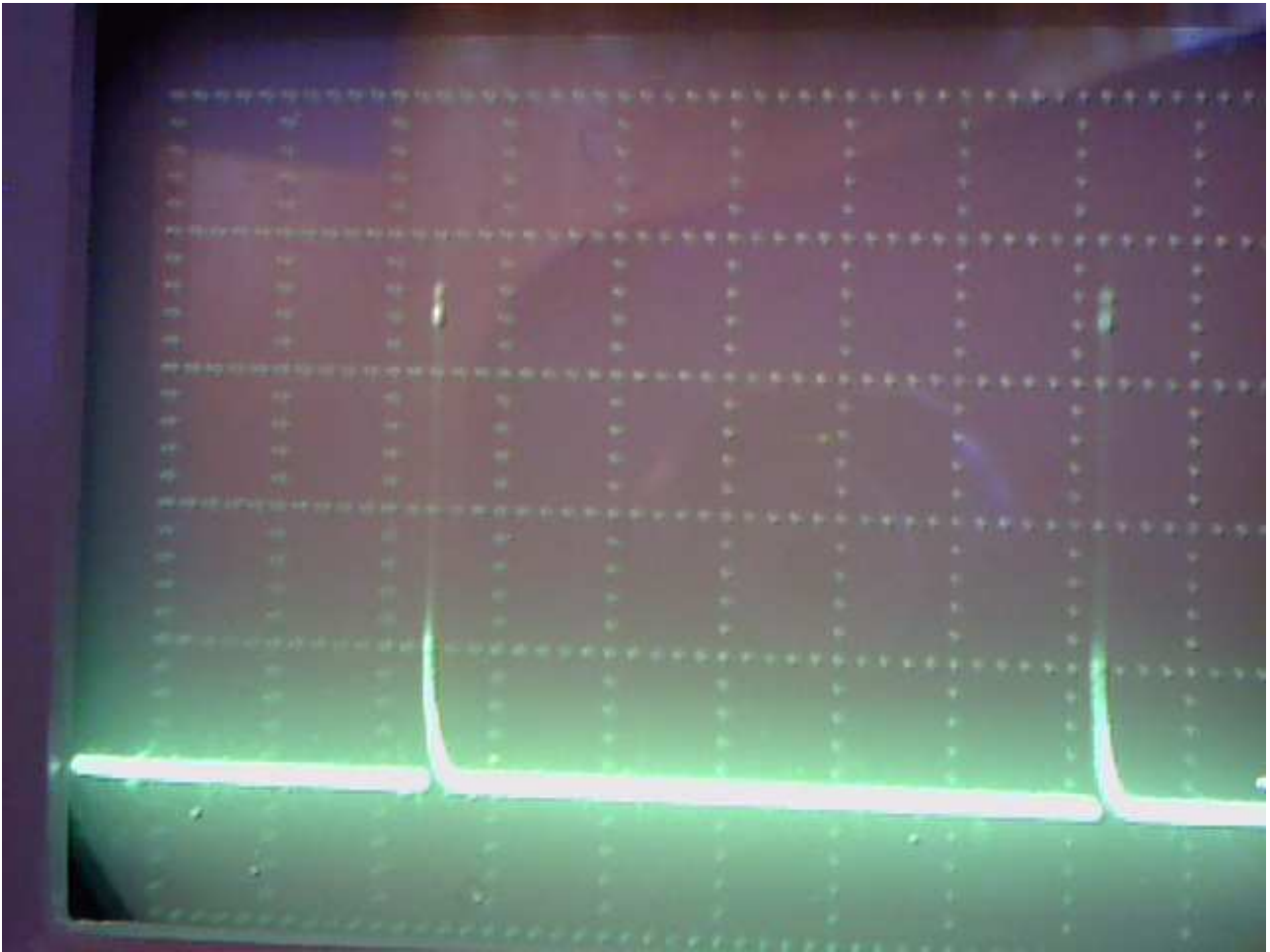


And so let's continue. As you may have guessed, selecting resistors, standing in the triac gate and watching picture on an oscilloscope, we need achieve maximum swing amplitude pulses. Next solder remaind components of the scheme, see the photo, I changed it a bit, in this embodiment, it is safer to work, I highly recommend this option. Today I'll start publishing the device itself, I am now preparing photographs.



Next, after installing and soldered to the board optocoupler test other components. Replace the timing capacitor C \* at nominal 100 nF . Between terminals A-B set 500 ohms resistor attach scope in parallel on it and watch the wavwforms, it should be like in the photo, at the photo 2V/div , sweep duration of 0.2 ms. I have 4 divisions on the grid on the scope screen. Likewise, check the diagrams for contact groups, CD and EF. All diagrams must be identical. All oscilloscope probe and remove the shunt resistor 500 ohms. Take voltmeter, install it into a DC voltage measuring DC. We measure alternately on all groups of contacts AB, CD, EF voltage . I have it 9.09V, all groups of contacts. On this long lay off fee for the time being and start manufacturing collector TPU.

PS And always keep an eye on current consumption, it must be of the same order. Keep in mind that we are dealing not primarily with the electrons and phonons , in other words , acoustic processes in crystalline semiconductor , which here and so offhand difficult to discern and may be confused . Remember the experience with a piece of copper and a scalpel , acoustic charges flowing from the human body is well defined electronic devices , in particular in this case the oscilloscope . Therefore, if current consumption increased sharply, then interfered with the electrons .



Measure with oscilloscope probe between AB (without resistor 500 ohms) and publish picture. Current consumption with a jumper must remain at the same level.

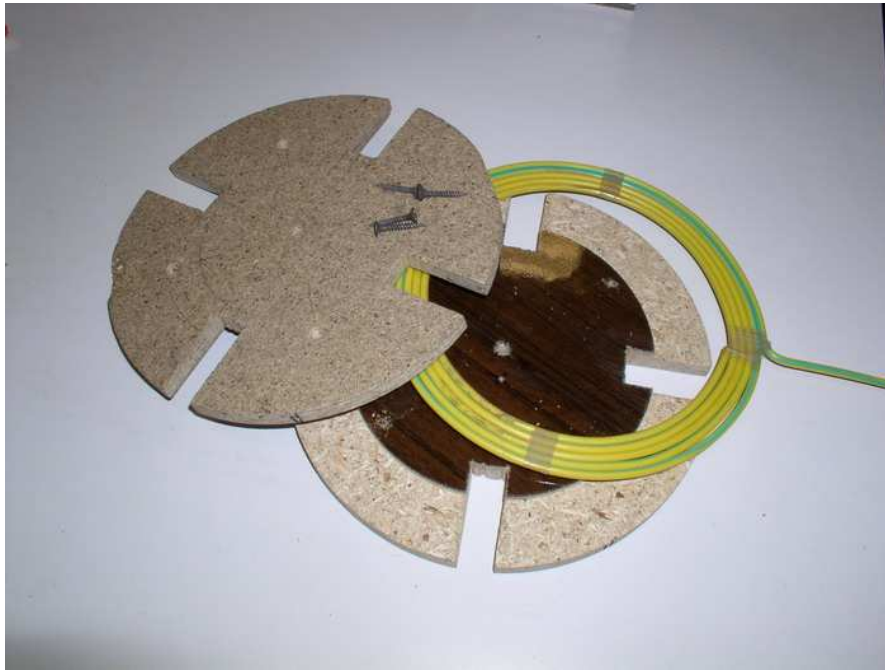
## **Collector**

Let's start. To manufacture the collector we needed solid copper wire marks PV-1 2.8mm diameter, which you can safely purchase in stores selling electrical goods, as well as in the markets. And also need the acoustic wire that is used to connect speakers and speakers in car interiors , etc. I bought it in a store that sells musical instruments. This wire noodles brand Belsis cross section 2 x 0, 35 (mm square) , you can take any other, but I prefer this one. I used it 10meters, but take on the meter, two more. In order not to miss during winding . And also to give a single-strand copper wire PV-1 forms a circle, as the mandrel , I used a plastic connector 150mm and a height of 62mm Company " Ventilation systems", which is now used commonly for docking plastic vent pipes cylindrical shape. See photo number 1.



The first step I took in hand cable PV-1 and wound on a mandrel (connector) five turns. Removed the resulting annular spring (with a small tail) from the mandrel. Vacated the seat on the table and clutching the table first spring coil, formed the inner ring counterclockwise approximately 155mm in diameter, holding this coil on the outer perimeter , and so situated next to all the other remaining three turns . Get a flat coil of five turns, I constantly pressed to the table. Using duct tape , in several places I gently gave the rings to each other. Next evenly wrapped duct tape all cylinders . Get a flat bagel with a tail of about 30cm . See photo number 2 .





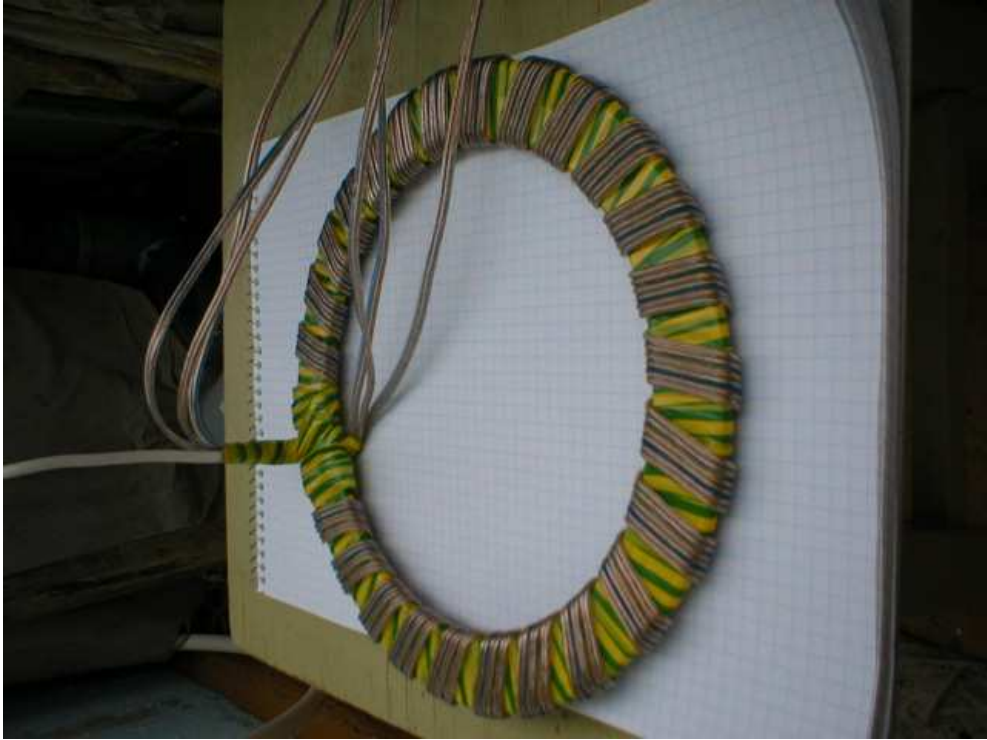
And so, if you place this flat coil on the table and look at it from above, it is wound counterclockwise. The inner diameter of the planar coil turned about 155 mm and about 200 mm external .Second step: Speaker cable (about 12 meters) evenly divided into three equal parts by length, lined them at one end. Releasing approximately 37cm long tail three, fixed them with



electrical tape on the remaining wire tail PV-1. Next take the resulting three-wire cable under the noodles flat coil inside. And he began to reel him away clockwise along the perimeter of the planar coil evenly distributed on a plane in the form of a cable and observing the color-coded to one side. Winding this improvised loop implemented with a step on the inner diameter equal to the width of the flat coil noodles. Domotav to the end, a second end fixed loop tape. The result was a kind of ring groove between turns of the loop along the entire perimeter of the ring. See the photo number 3.



Third step: the whole structure is uniformly wrapped with electrical tape. See the photo number 4



Thats all so far. Ask questions.

X: Is it necessarily wind "audio" wire with a gap, or you can turn to turn?

Michael: Between turns of 3x2 wire should be a gap the width of two single wires on the inner ring of the planar coil.

X: MiMo, I have questions

1. Wire marks PV-1 of 2.8 mm diameter is the outer diameter of the insulation?

Michael: without insulation

2. Tail -ie derive and turn only one wire of coil?

Michael: yes

X: Based on photos, using audio cable as it is, with 2 wires?

Michael: yes

PV-1 wire of 2.8 mm diameter which is 6 sq mm

X: after installing optocoupler 4N35, temporarily, until find required or let it work, appeared through current, ie MOSFET fully opened. I fixed issue by shortening phase pulses up to 0.3 us, the ratio turned 0,65-1,2-0,3-1,2 microseconds. Current consumption of 5.7 mA, jumpers do not affect the voltage at the A-B, etc. 10.8 V. To what extent phase pulses can be shortened?

Michael: I do not know the characteristics of the optocoupler 4N35, but it probably faster . MOSFET can not be fully opened. I have already said we are interested in acoustic processes in the semiconductor crystal. If you know the image is similar to that published by me in the post and your oscilloscope still sees these impulses, so leave it.

How about we can narrow down the length, in other words to define the boundary conditions. I did not set goal to research this. It takes a series of experiments and very fast semiconductor components in particular in this case optocouplers. Also need appropriate measuring equipment, which I do not have. This is actually a separate issue for studies requiring "painstaking" work.

X: The store does not have a solid core copper wire. There is aluminium 3.2 mm, will it work?

Michael: I did not work with aluminum. Do not have time. Use collector in one wire of copper, no less than 2mm in diameter. Then will experiment with other materials, first gather design as mine.

It would be good if somebody who is not currently involved in the manufacture of the device, but closely follows the theme and thus holds one of the graphical editors. Would draw this flat coil with a spiral-wound, in the figure. We could, discuss it and make sure that we understand each other correctly. Before the main participants in the process will start its production.

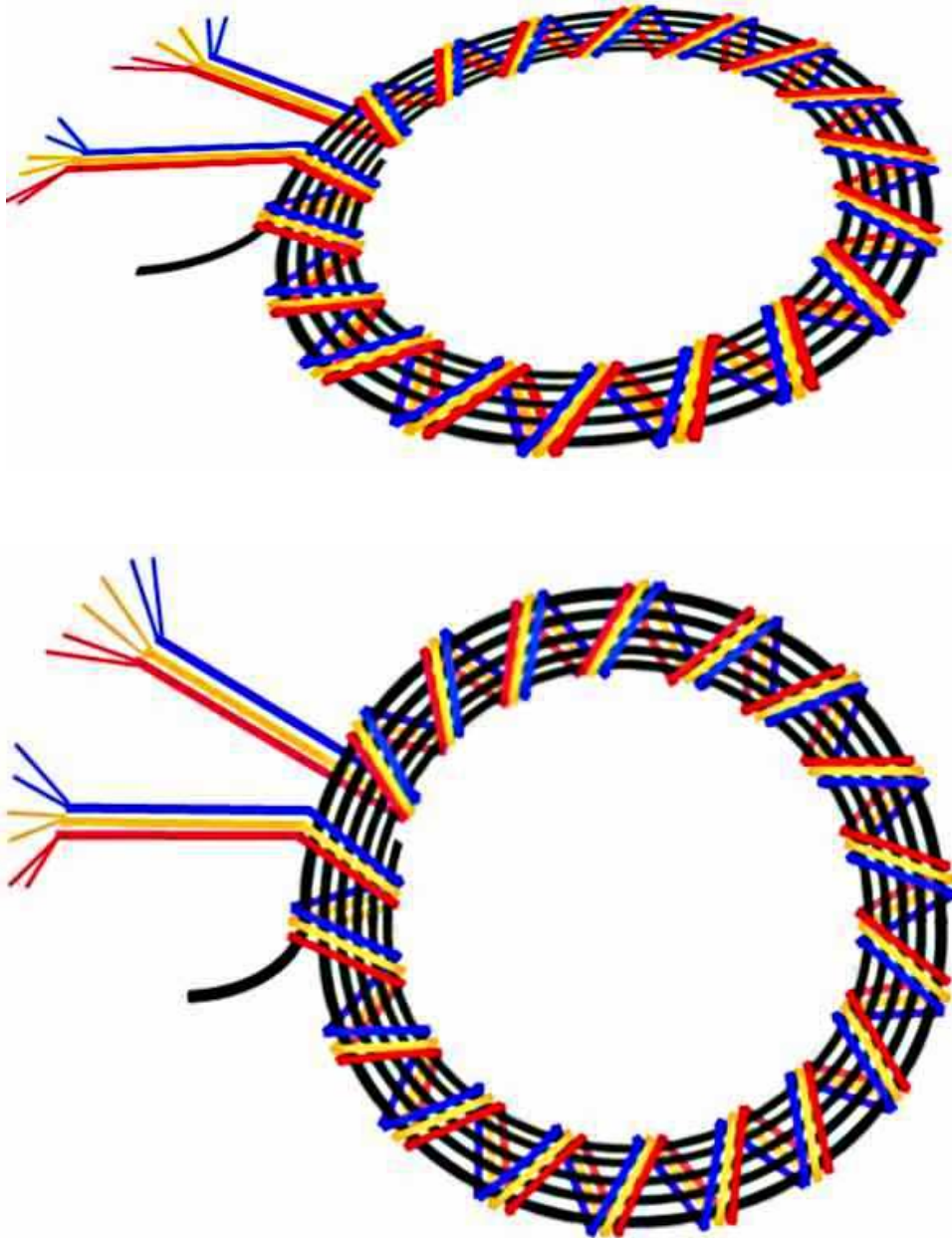
P / S: Quote kvr09: «And the inner end of the planar coil will left not connected?"

Yes, the inner end will be not connected.

Will use copper. Any diameter may be greater than 2 mm. If you'll be ordered to someone buying this copper wire, keep in mind that we will have two completely identical flat coils. So that the wire required twice more.

X: I found copper dia. 4 mm, stranded

Michael: Only solid wire, we are interested in its surface area. Use one core if it is 2mm.



X: Is number of turns of thick wire critical? The location of its spiral coil? What is important that the number of turns or winding diameter?

Michael: Three - to six turns. More turns will not improve anything. The distance between the windings of the flat coil are important, as well as insulation. The best option for a thin-walled copper tube collector. But it is suitable only for very large structures TPU.

X: I have pieces of cable NYM 4x6mm/kv, just like what we need. Only now length of 1.5 meters, and will need about 5 turns 2.6 meters. Whether it is ok to solder two wires together?

Michael: No

When the two identical flat coils are ready, stick on top of them a small piece of paper with an arrow (a piece of scotch tape) indicating the winding direction of the planar coil of thick wire.

Oh, I almost forgot. Before you begin to wind a flat coil of thick wire. You need to consider:

1. The inner end of the wire to be processed with a fine file. It is necessary to form a face perpendicular to the wire axis. For example, as ferrite rods used in mobile receivers. In other words you need to form the boundary between media. Do it on the eyes, this accuracy is sufficient.

2 . Take the book and found that the speed of sound is about 4700m/s at 20 deg. Celsius. Knowing the speed of sound in copper , I need to cut the length of the wire coil nearest multiple of 1/4 wavelength of the sound , as if to imagine a sine wave on the graph , the absolute maximum amplitude of the wave will be between 90 and 270 degrees cycloid (negative values have not interested ) . So according to the formula wavelength ( $\lambda$ ) is the quotient of the velocity of sound in the medium, in this case in the copper conductor on the frequency of oscillation. And the oscillation frequency in this particular case will depend on the radius of the rotor circulation protoplasm (ether). In other words laying entire wavelength for the average perimeter of the planar coil . $F \text{ ( Hz )} = n / T = n * V / L$ , where  $n = 1, 2, 3$  , harmonics ,  $L$ - average perimeter of the planar coil ,  $V$ - velocity of sound wave propagation in copper. So decide for yourself what should be the tail of the planar coil ( 1/ 4 wavelength ) to get the absolute maximum amplitude at the corresponding averaged radius thereof .

When the manufactured of two coils , be sure to put them on the arrow indicating the direction of winding the thick wire .Next , put them next to each other on the table, so that the direction of the arrows on them coincide . Then one of them roll over and connect them together using four wooden bars 3.5cm height and cross section of about 2.5cm to 2.5cm , while also using duct tape . See photos. At this until the coil is put aside and start manufacturing more than one element of the device TPU.











X: Is that's normal? 2.6 mm diameter wire with insulation value in the second picture ... Actually, I doubt this acoustic wire ... they have it in the store called acoustic, but on closer inspection it looks like a normal installation, veins not isolated, that is, it does not type litz simply stranded...

Michael: Everything made properly and right cable

## **Safety**

Firstly, I want to talk to you about the safety measures. As they say, forewarned is forearmed.

First, I do not know how to apply gradient magnetic fields on humans. For this reason, always turn the unit for a short time.

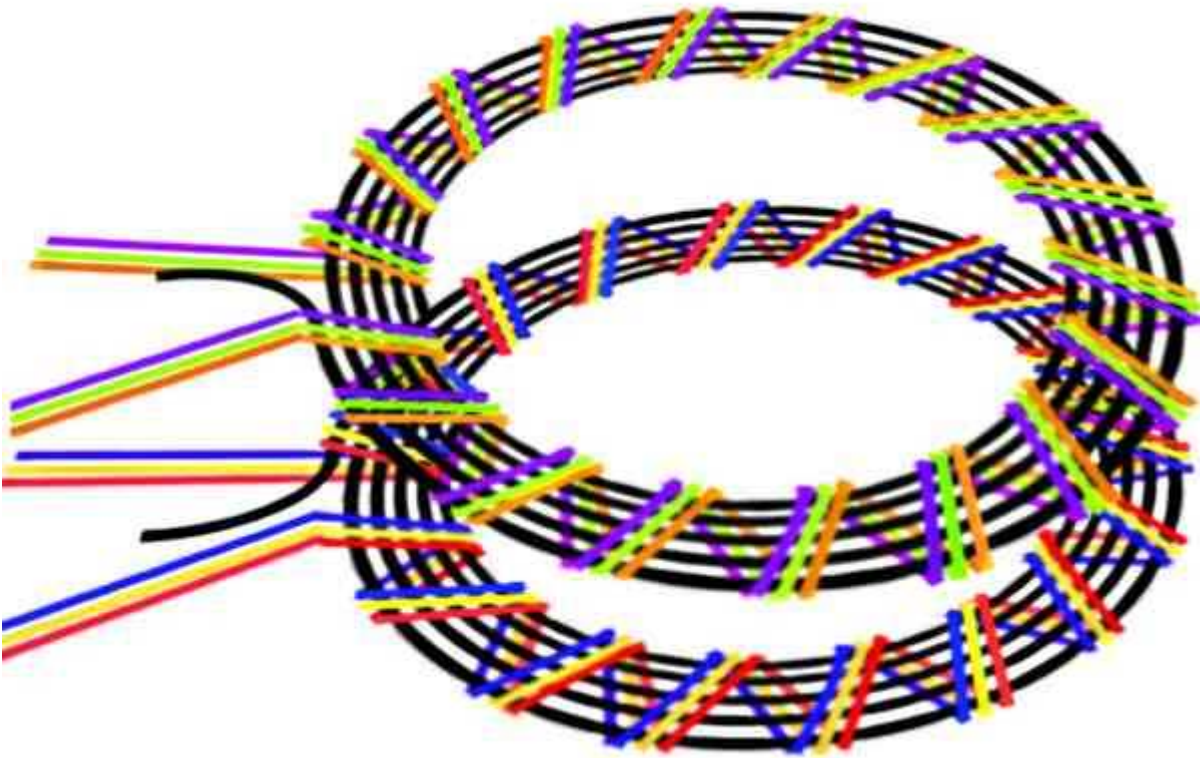
Secondly, any metal objects in the area of the experiment should be avoided; it can fly freely in to your head and will be “unwanted” results.

Whatever you do, you do at his own risk, you have the option to stop at any stage of the experiment, and I do not take the blame for your actions. For this reason, I warn you in advance.

Third. Without my instructions collected not include installation and experiment .If you observe safety nothing terrible will happen.

X: Well .. Michael please specify the approximate radius of the experiment. Is there an impact on nearby electronics? Probe of the oscilloscope will beat?  
Sincerely!

Michael: I'll clarify, in the course of how to organize the experiment zone, where to place the measuring equipment. I wrote this to the fact that as the device will emerge in the collection, you can take the initiative. As long as it is not desirable. You people are savvy and nimble.

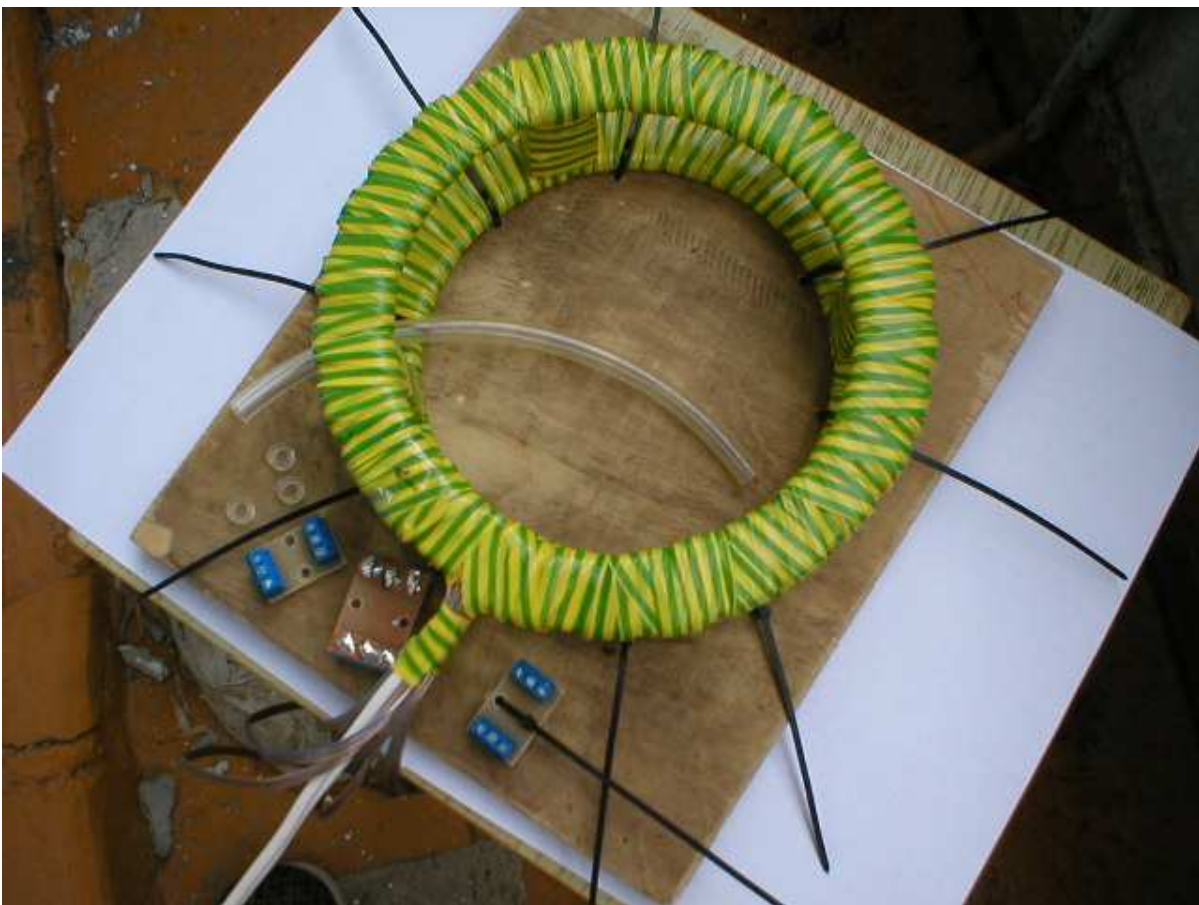


Coils arrangement





This collector is fixed on a piece of plywood ( a natural insulator crystal clear for this type of energy ) , plywood Size designation of those considerations to three sides with plywood production remained about 2cm , and the fourth side about 6cm. This is all done for the installation of clamp pads for operational switching wires , I have these pads have done little more than 10pcs and they have me wander from design to construction. These terminal block I set for washers , which are made of heat-resistant hose with an inner diameter of 6 mm ( smaller diameter hose is not very robust for this purpose) , this hose is sold in any auto store or auto- market motorists use it as fuel hoses . Collector I hook to the plywood with plastic clips ( udavok ) , putting them along the grooves formed on the flat coil winding of the speaker cable . Slipknot also be purchased at auto store (auto - market) or in an online store that sells electrical goods. See the photo:









Some people complain that I did not make specification. Like, they have to go back and forth for every little thing. What I will answer all together, those who have me there on this subject claim. To me the solution also did not come all at once as a boxed Rar- file, it took years for all kinds of experiments and meditations. All were given little by little, bit by bit. Sometimes to check any thoughts in practice, had take the train and travel thousands of miles to get this or that element of component parts. And then in fact it turned out that it was a false move. If you have difficulty, retreat and do not to pursue the case.  
Michael.

PS Collaborative work, because it is called so. Each participant in this process makes its contribution to the common cause . Some repeat the design , others sit in the bushes and analyze (with a smirk on his lips ) , and others are preparing graphic material . When repeat design . Start reengineering , and take up the case spetsy , on the part of the circuitry (which sat before this time in the bush ) . Next connect technology developed optimal assembly technology , and received a joint product that is ready to repeat any person , far from electrical engineering.

## ***Magnetic field sensor***

Before proceeding to the next element manufacturing TPU, first lets make a small device. We need it for visual (average) measuring the intensity of scattered alternating magnetic field. For this I used half-meter wooden ruler, LED (which is called over bright, now it is usually used in a flashlight, a few pieces mounted on the reflector) ferrite rod from compact receiver, and enameled wire (I used 2x 0,45mm diameter) . You can take any, what you have on hand. Fabricated device follows ferrite rod wrapped several times a piece of printer paper. And wound coil rows to fill the entire length of the rod , on top of the second coil wound same row. Between paved the insulation layer. Inductance was 8.5 mH . Parallel to the ends soldered LEDs conclusions and all secured on the ruler. See photos. You can use any profile ferrite core, which is at hand. Or use some other profile ferrite sure you have something like this.

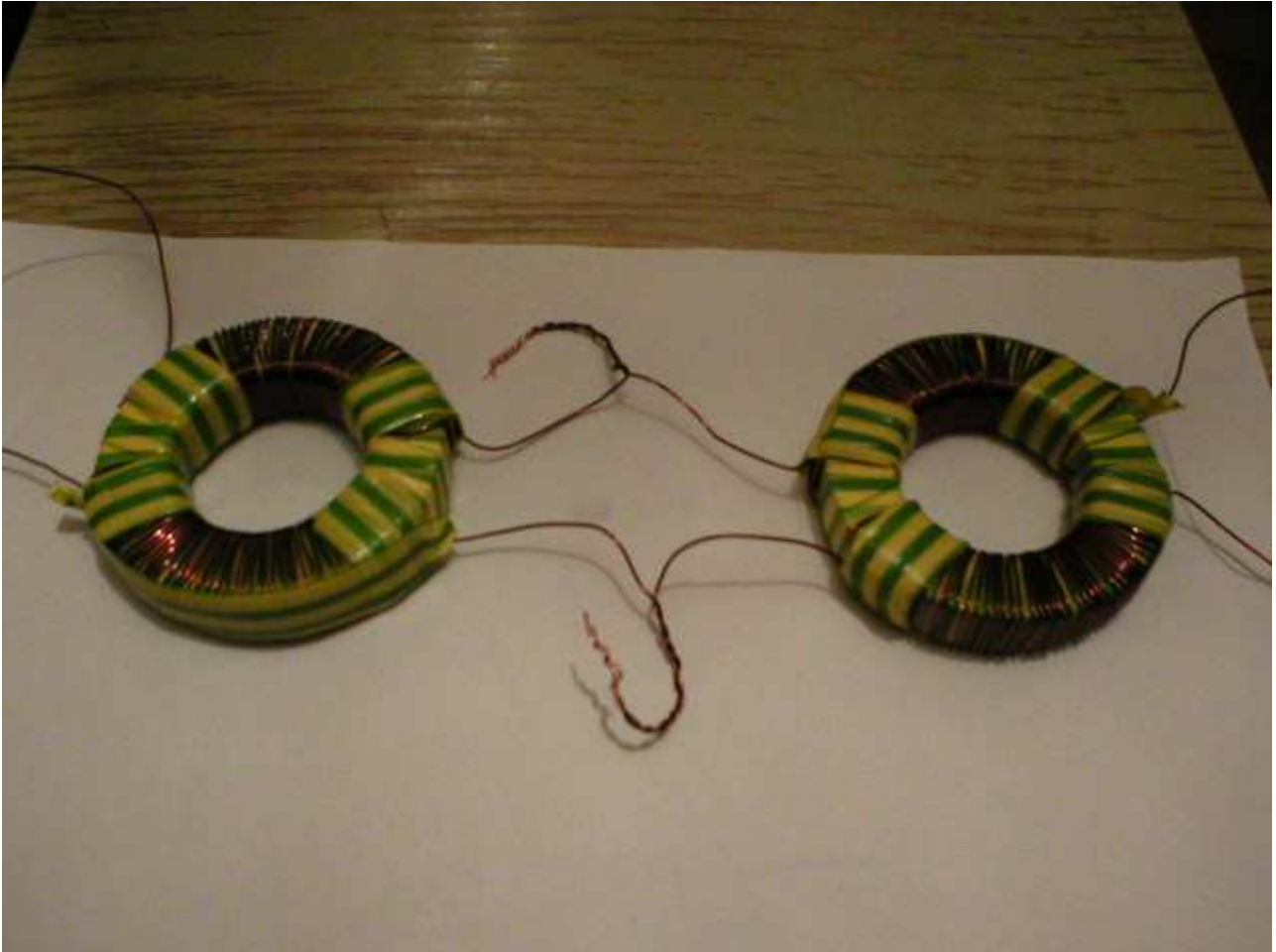






## ***Magnetic field source***

Further, wind on two ring cores two windings on each ring with the geometry as shown in Figure number 1. Figure winding connections shown in photo number 2. Explain the bit in your example. I'm in the two rings are available with standard size K67x40x12 brand 2000HM.



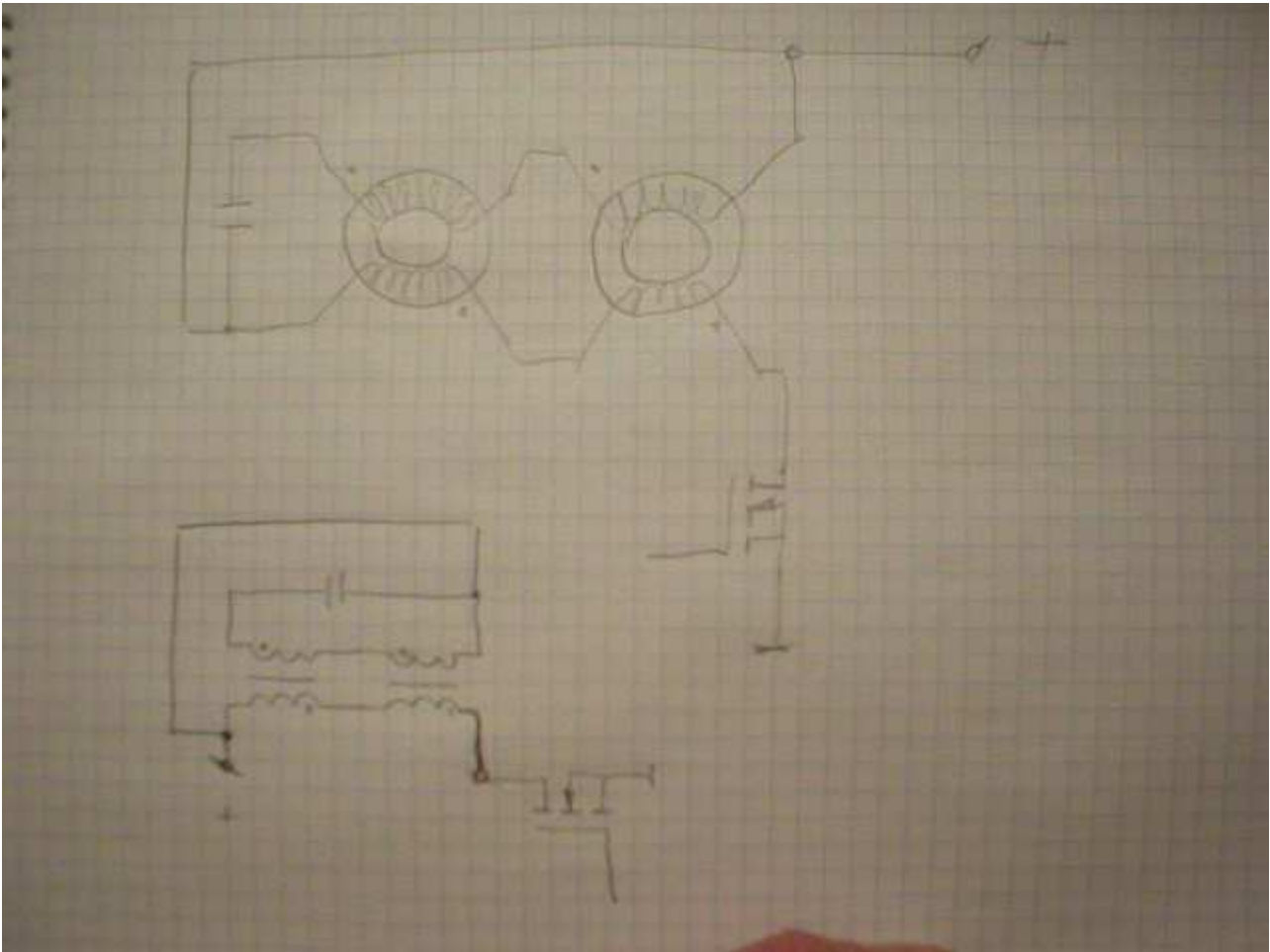
pic1.

1. Pre chamfered edges with sandpaper ferrite (slightly) to make the edge of the ferrite less sharp. Next, wipe the ring with a dry cloth and then wrapped with electric tape around its perimeter.
2. Putting the ring on a sheet of paper from the notebook, I divide it in half and put two marks perpendicular to the axis of the ring.
3. Stepping from one of the labels and start reeling 3.5mm rows winding enameled wire  $D = 0.71\text{mm}$ , winding method by itself along the ring clockwise, just as we wound speaker cable on a flat coil, but here we winding "turn to turn". So, fill half of the ring, not until the next mark 3.5mm. On both sides of the coil leave wires all about 15cm. Further, by rotating the ring in the course of winding, now step from the second label 3.5 mm in the same way wind the second coil on the ring. Observing exactly the order and direction of winding. Exactly the same procedure should be followed with a second ring. The number of turns in all four coils must be the same. What eventually happened, each ring has two oppositely arranged (180 degrees opposite each other)



clearance on each 7mm. For what it's done in order to form an alternating magnetic field as a disk (like a circular saw) One such drive in one gap. Another such disk in another gap.

4. Connecting these windings like shown on the photo number 2.



pic2.

5. Collect generator with adjustable frequency (up to 200Khz) and pulse width (from 0 to 100 % duty cycle ) at the output of the generator install pre- and output stage . Switching transistor (example IRF740 in general, what I had available) .

Coil is connected to the scheme as in the photo number 2. And I start to pick up and drive frequency capacitor circuit in the resonance region. While constantly adjusts the frequency and duty cycle. Achieving maximum radiation in the gaps between the edges of the coils on the ring. I turned capacitor capacity of 100 nf . And it is the breakdown voltage of 400V I choose. Current consumption devices should reach from about 0.7- to 1.2A. The feet of the condenser must be clean sine wave resonance around 120 - 180V. Using previously assembled tool (see above topic) check radiation magnetic field in the gaps between the edges of the coils, LED will stay bright even if the probe does not touch the gap of about 10cm.

6. powering the master oscillator and the output key stage DC voltage of 12V.

7. Having device performance in order I take frequency characteristics and duty factor on the master oscillator with an oscilloscope.

Now a little about safety. You should wear cotton clothes if hot, naked torso. No synthetics. After switching off the device immediately lean over it, it refers to the case when the device is displayed on the performance ( I do not know that there, but having worked a bit on the maximum modes that there are around Me and this is something else there are several minutes).

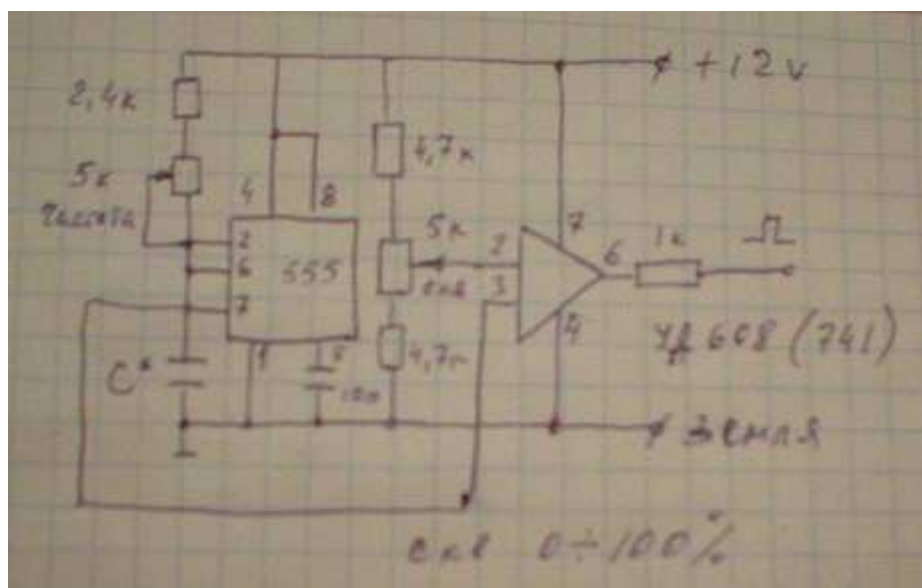
If you close the radiation zone is in the magnetic field. Tingling may occur in the mouth, jumping out of a small rash in the mouth. In this case, you need to stop experimenting until irritation persists. Maybe a day or two. Further, if a strong tendency on the coils can grab the heart, so not to breath, do not exhale. During the summer, these symptoms can be easily removed if you remove shoes and stand barefoot embracing together with birch. Passes instantly within seconds. In winter, it is better not recieve a dose of electromagnetic radiation. After the experiments need to ventilate the area by organizing a good draft.

That's all for now. Ask questions. Michael.

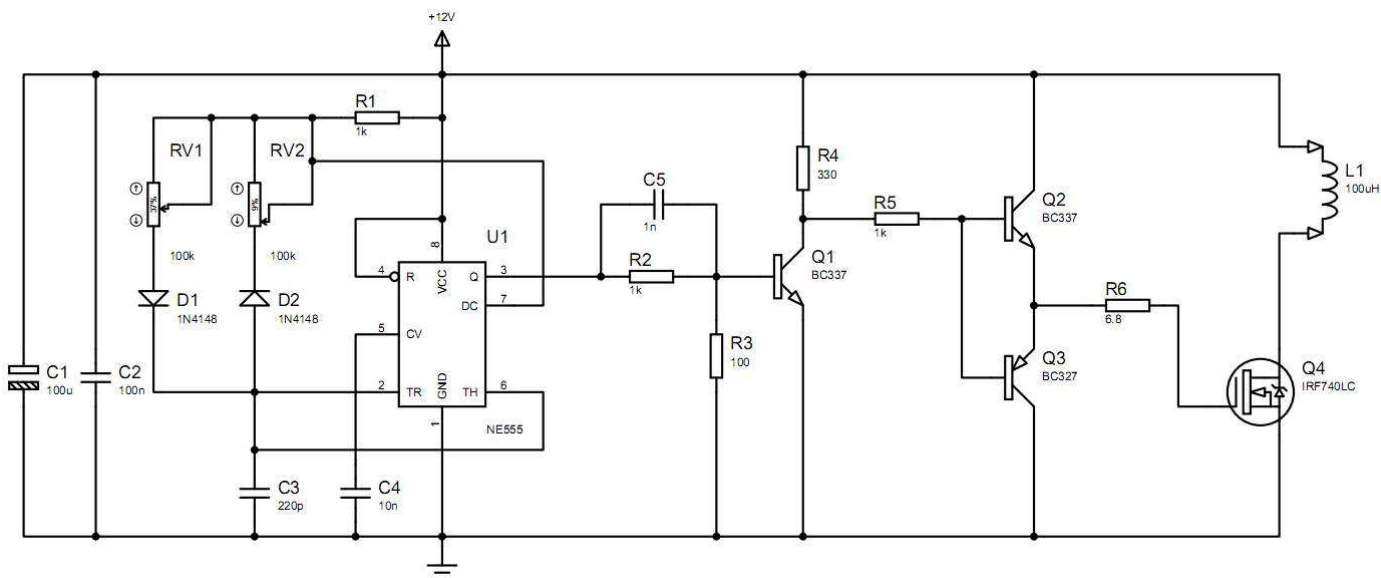
X: I have rings 47\*26\*12 can I use them?

Michael: yes

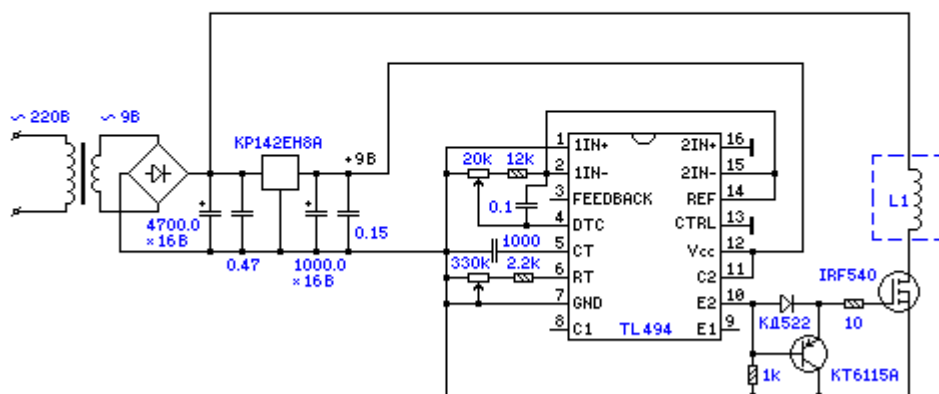
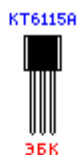
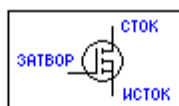
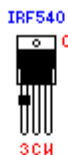
Try use a diameter of rings not much smaller, use the size given in my example.



pic. pulse generator



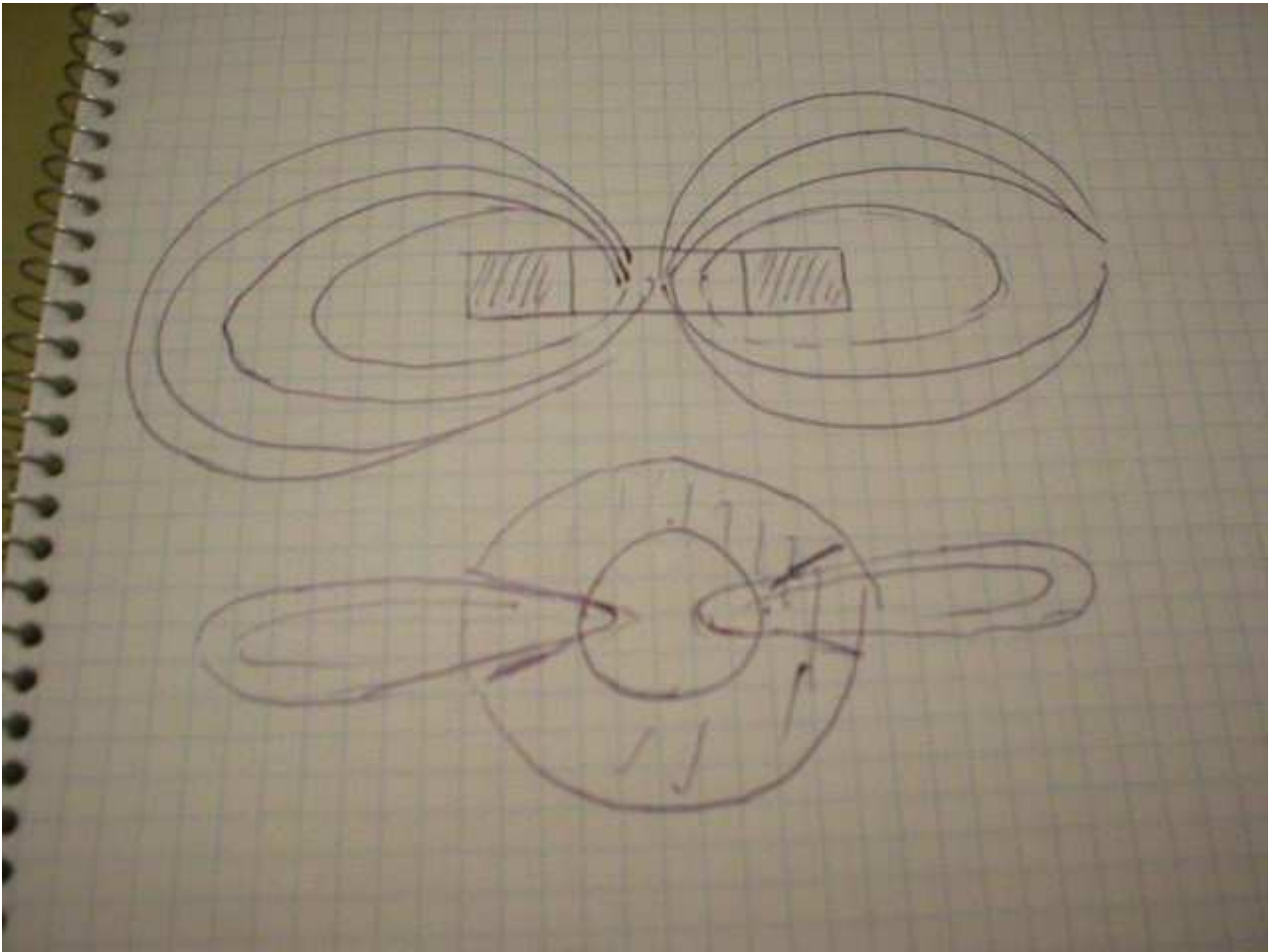
**TL494**  
WWW.MATRI-X.RU



X: Is it possible to screened EMP of the generator and how, what a safe distance without the screen and with the screen?

Michael: I'm doing like this: put an oscillator circuit and output MOSFET on the table is and the coils in 2 meters on a chair. These coils are connected to the outlet of the network using copper cable 0.5-0.75mm sq. Do not point the gaps between the coils in your direction; they shall be positioned perpendicular to you.

Make a magnetic field probe I recommend, it is very useful to you, and in this case, to assess the sources of unwanted EMI.



pic. magnetic field configuration

It would be nice draw a picture of magnetic field lines from the coil. Approximately as in the photo.

We work with the resonance circuit just to get enough tension alternating magnetic field. Just need to do it more efficiently , using less energy . This you can only determine a practical way.

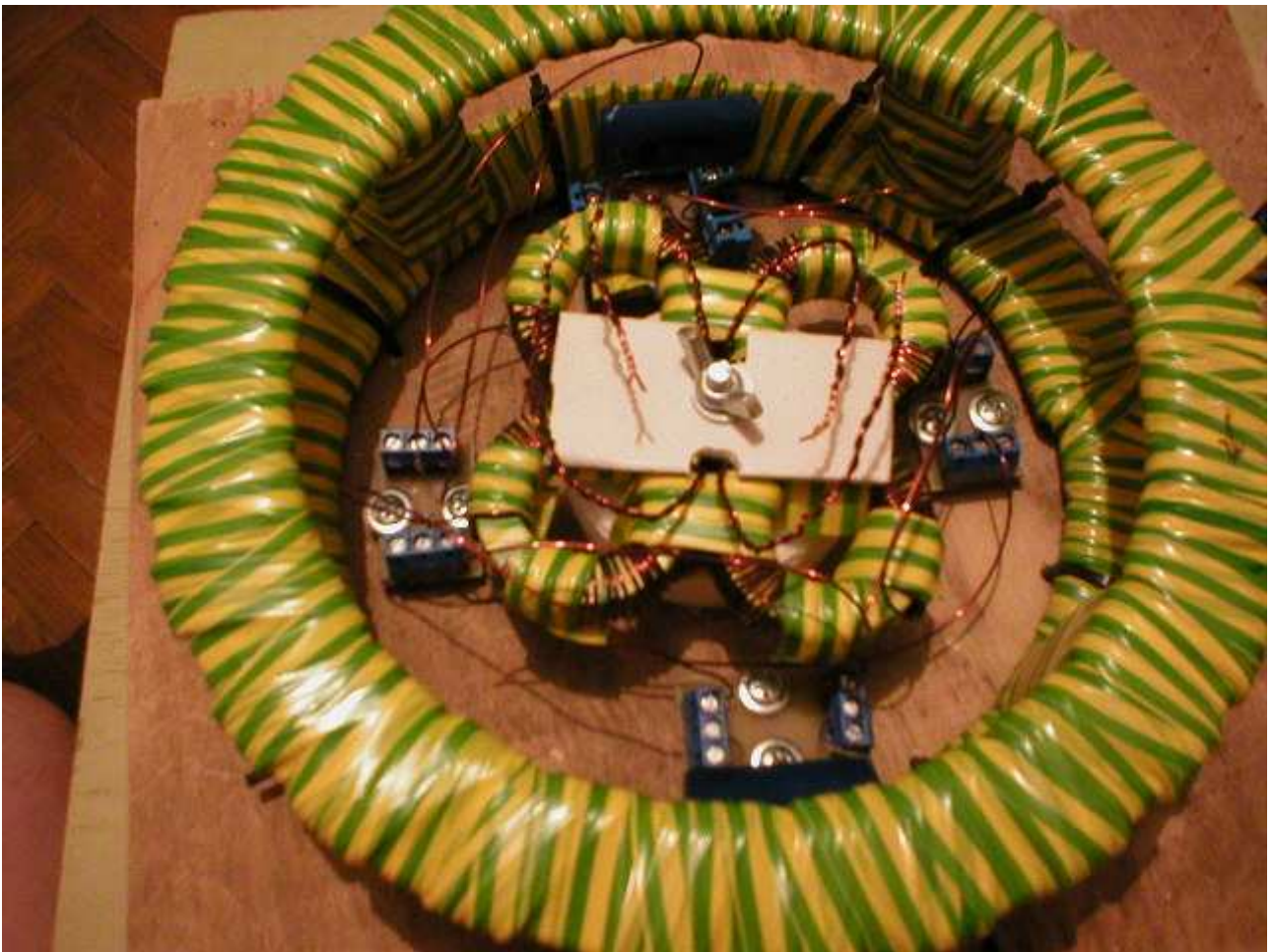
Comparing the relations of the radiation intensity of current consumption, the capacitor voltage amplitude and frequency on the master oscillator. Selecting the best option.

Michael .

Guys, this is just an element of TPU has a very narrow function.

You further understand this, when we start to place them inside our design .

Why I wrote about this mechanical resonance , only knocked you up

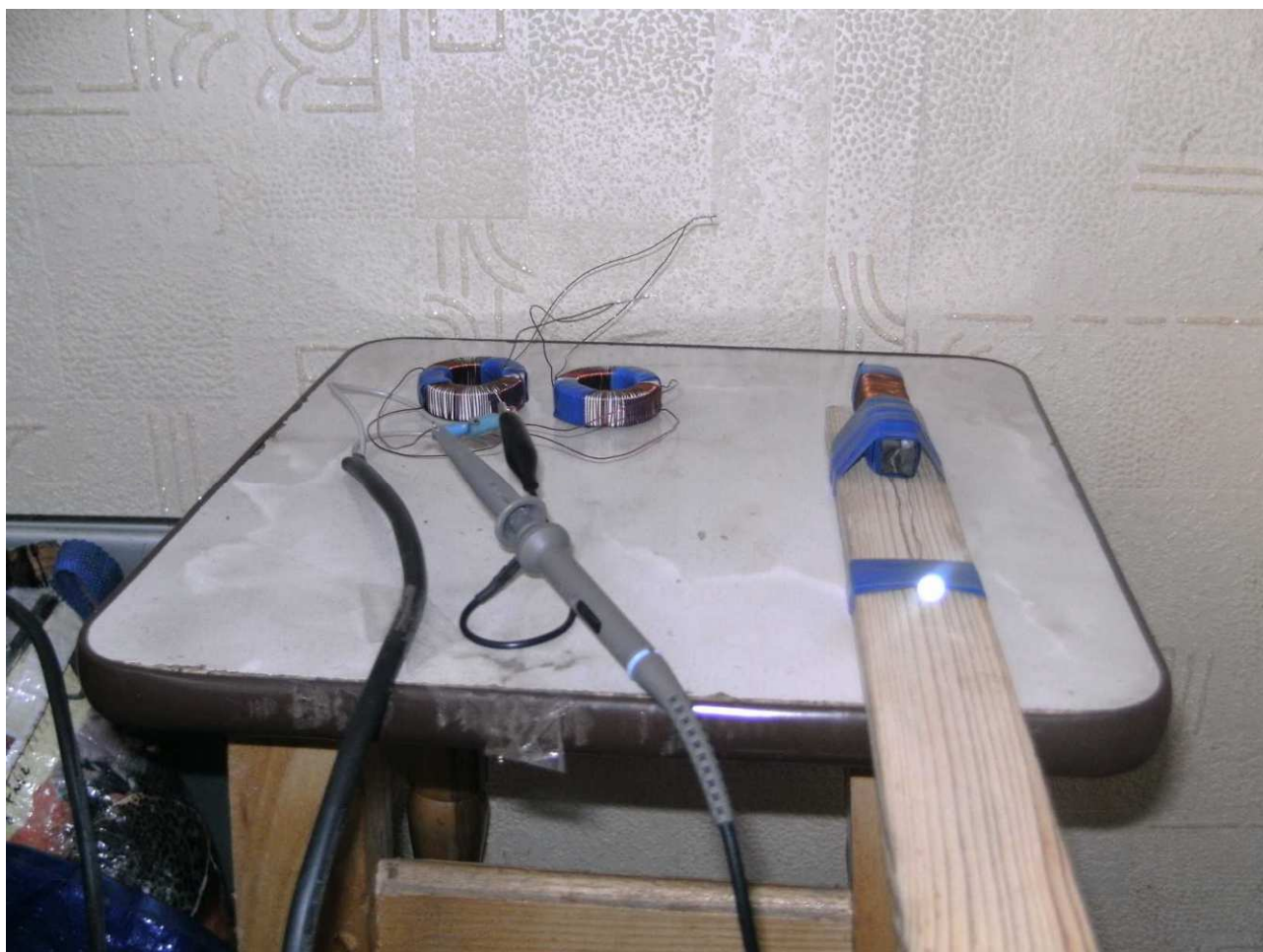


(meaning of the photo is unknown, it has been removed later)

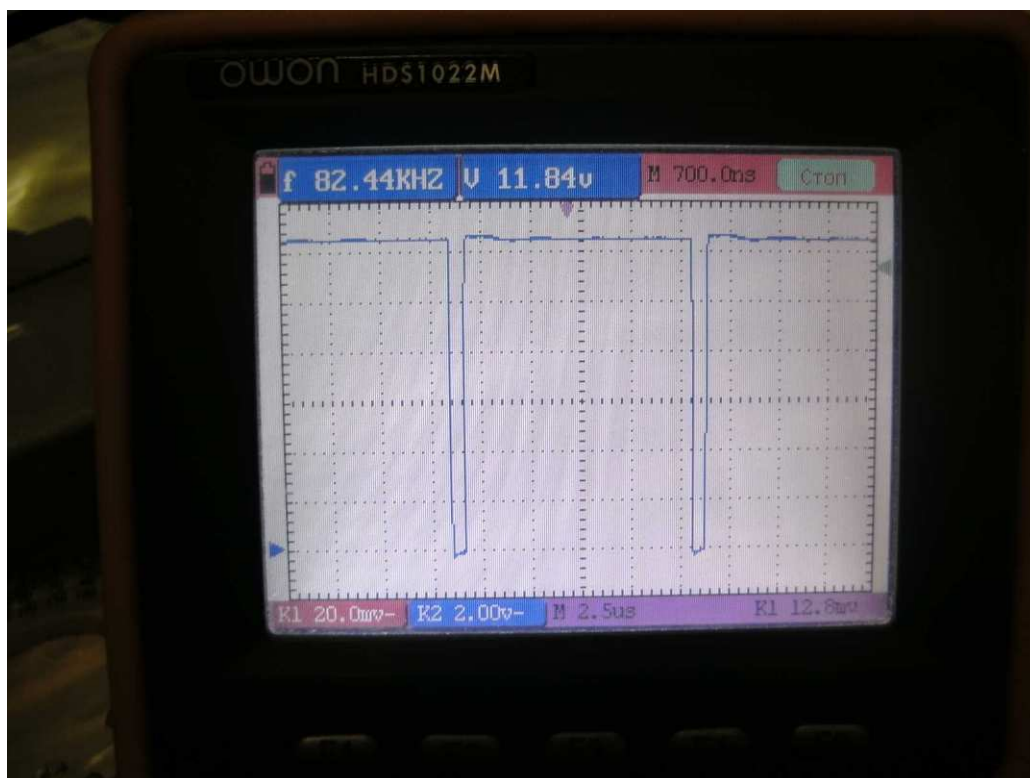


kvr9: I ordered ring cores EPCOS B64290-L699-X87 N87 R63\*38\*25  
Meanwhile wound on 40\*25\*12, wire 0,5mm 54 turns.

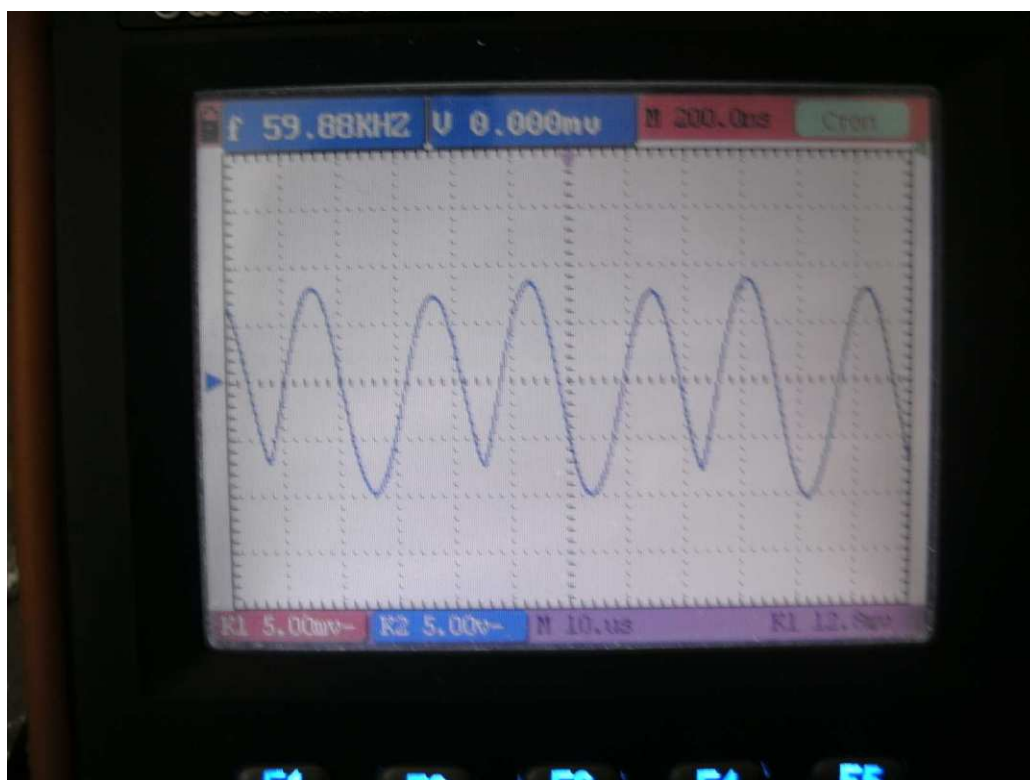
Connected to the generator coil, two capacitors in series 68n 250V, consumption 0.3 A, heard a hissing sound, the bare ends of the harness RF coils. The capacitor 100 to 200V 50-60 kHz sine wave at different resonances. When placing the coil on top of the other, aligning the unfilled regions 7mm capacitor voltage exceeds the limit but also to current 3A.



Michael to I, K: At least one of you can eventually check directly on the generator pulse width and period? On the oscilloscope, such accuracy is sufficient.



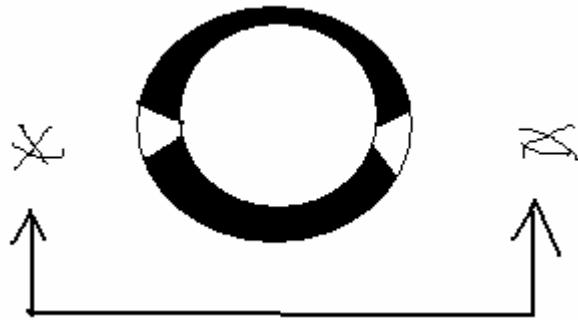
The distance between these points 32-33 cm gap between the coils 1 cm ring 40 \* 25 \* 12, wire 0.5 to 54 turns, now current 210 mA. Slight change in frequency hiss disappears, brightness of indicator also decrease. Duration of pulses ~ 0.8 ms, frequency 82 kHz.



To kvr09: With these parameters of the generator. What is the current consumption and the approximate voltage across the capacitor? And can you hear the hiss?

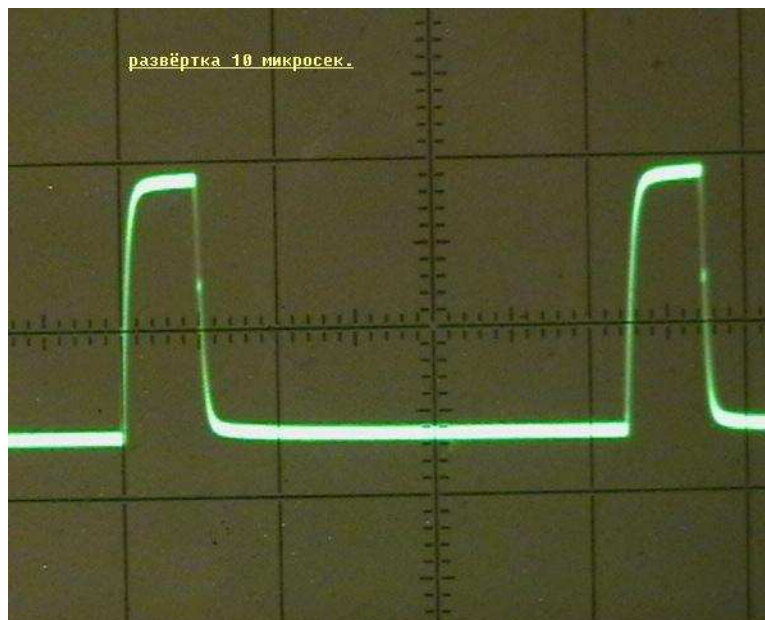
kvr09: 300 mA, voltage on capacitor 100 V, and I can hear a squeak and hiss

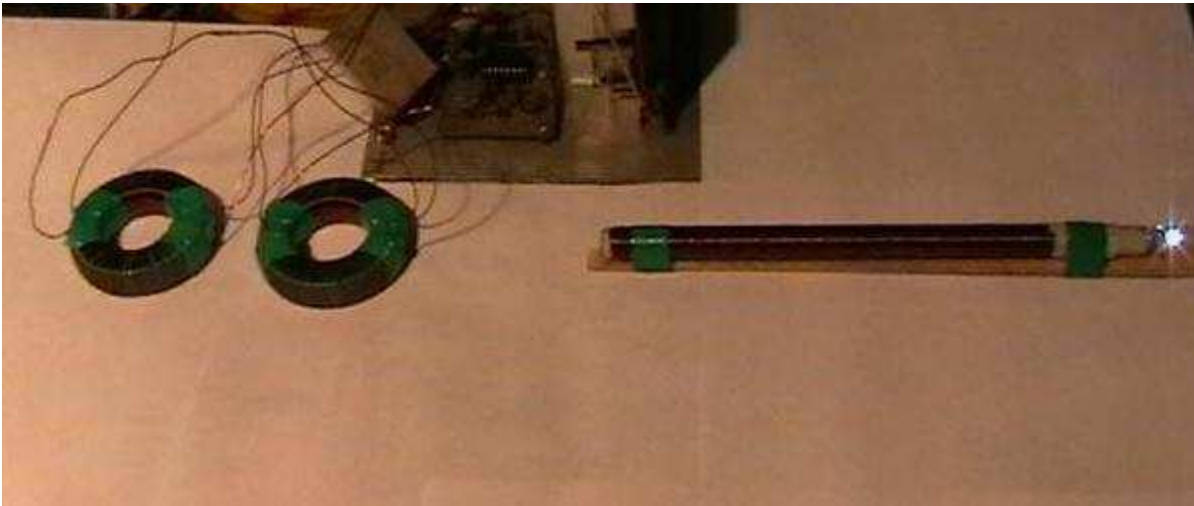
Michael: please measure distance as it shown on below picture where magnetic field sensor still quite bright



kvr9: The distance between these points 32-33 cm gap between the coils 1 cm ring cores 40 \* 25 \* 12, now current 210 mA.

I: wound on the new rings. Here are my results. Current - 1.1A Capacitor voltage - 370v. Hiss is heard at 12v when to increase or decrease power by 2v, audible hiss. And in response to the Michael post I got 40cm.





To kvr09: Yes we will modify the software.

I want to clarify with you, are there PWM in your controller? Can it be arranged on timers?

With the nearest hundredth your controller can still form at a frequency between 82 kHz?

I think I should, but still refined.

kvr09: The algorithm can be arranged in different ways, there is PWM, I need time diagram.

Precision 0.05-0.1 us at 20 MHz quartz. And yet, the hiss - it's bad for the schematic or vice versa?

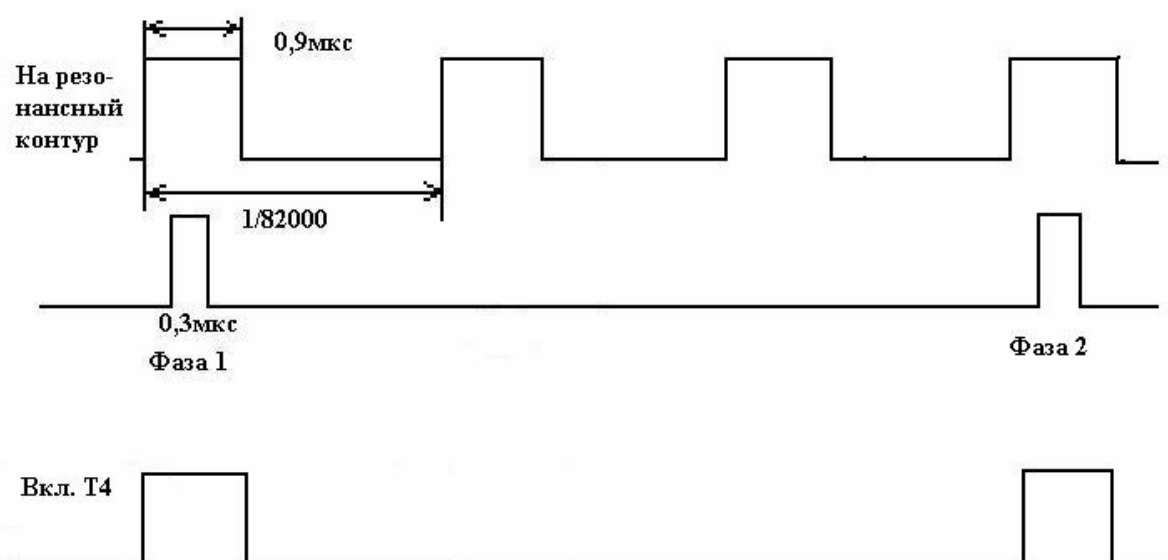
To Igor63: Do you now what the diameter of the rings?

Igor63: 55+32+12mm.

Please do not change anything. Tomorrow I will publish exemplary embodiment of fastening device coils TPU.

The board has a place, set socket and connect to it via a resistor from the output of the controller, which is responsible for creating software and hardware PWM method.

Igor63, for you it will be a pin 13 of controller.

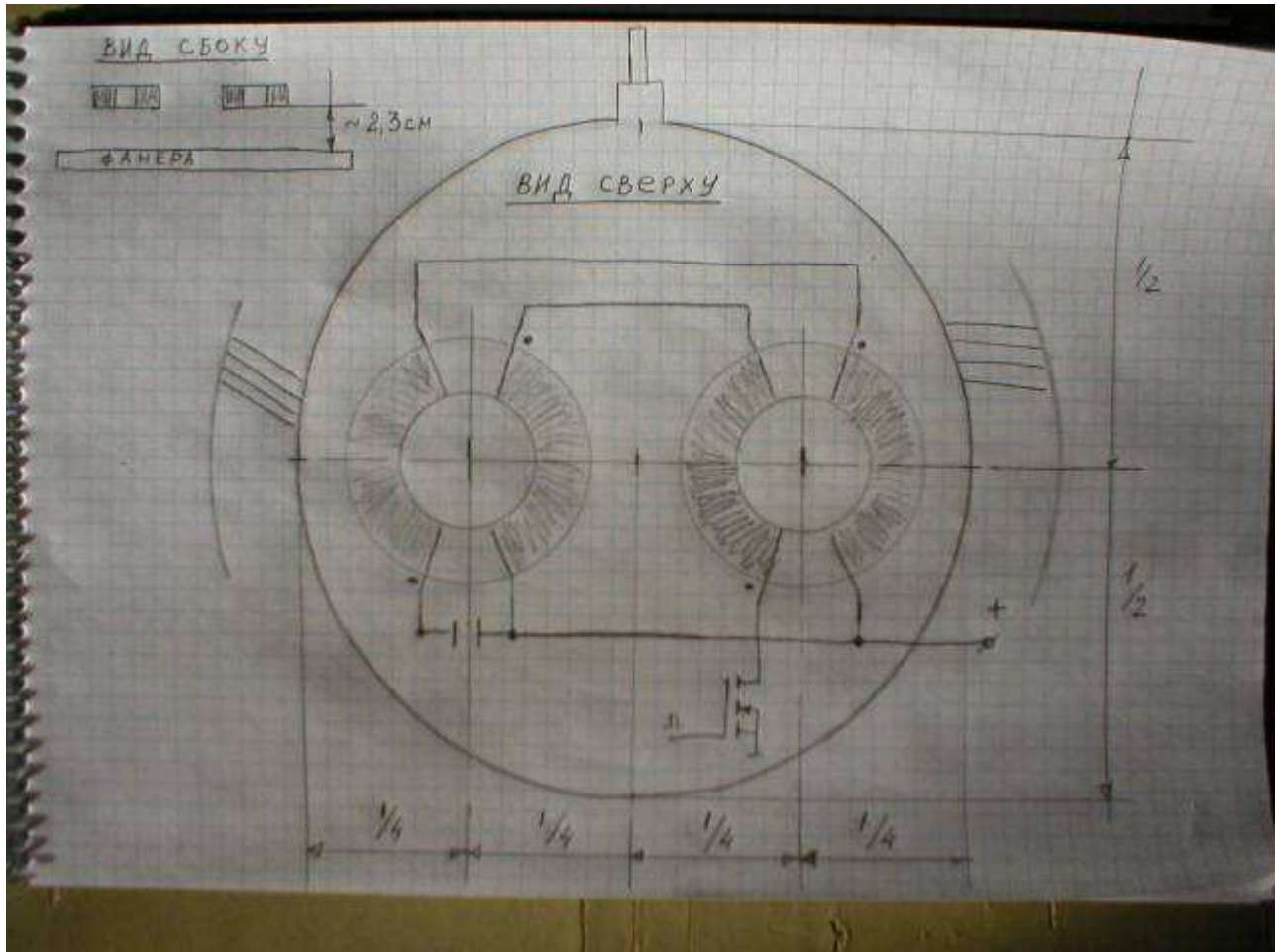


on top left: to resonance tank

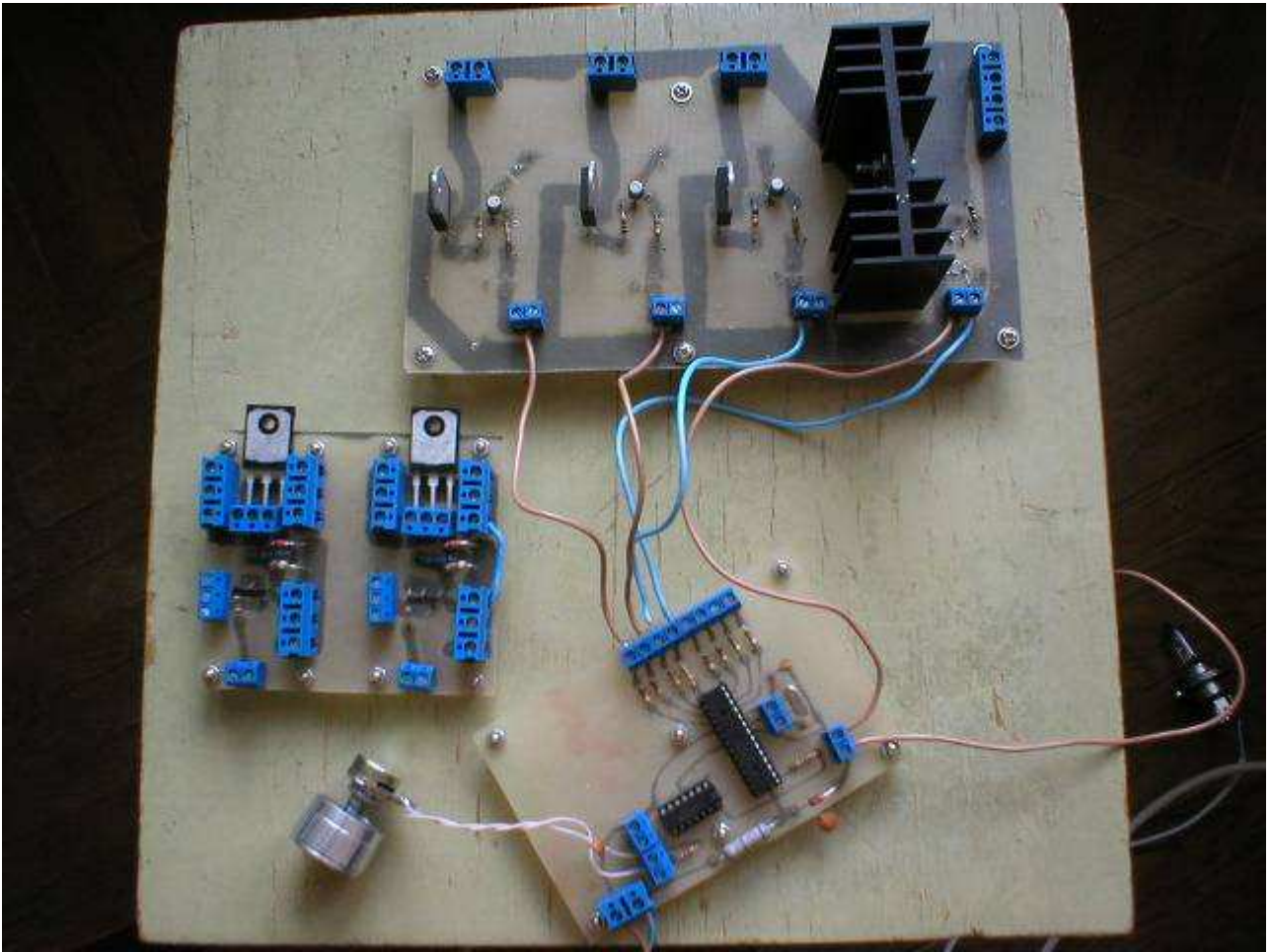
kvr09: MiMo, as I understand it, should be about such a diagram. Pulse duration phases now just 0.3 microseconds.

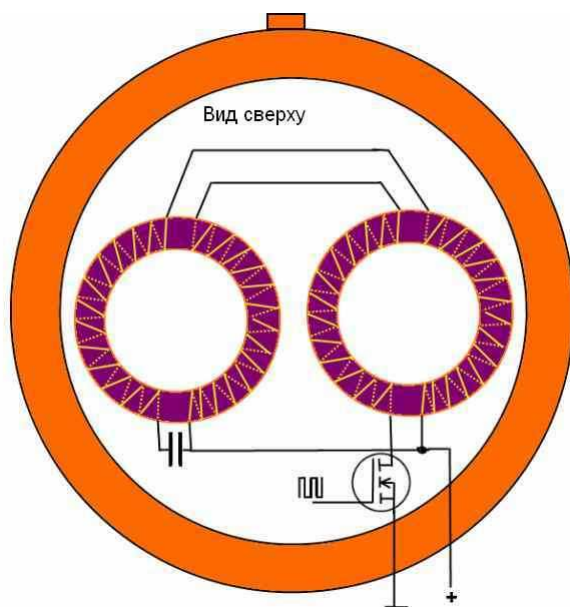
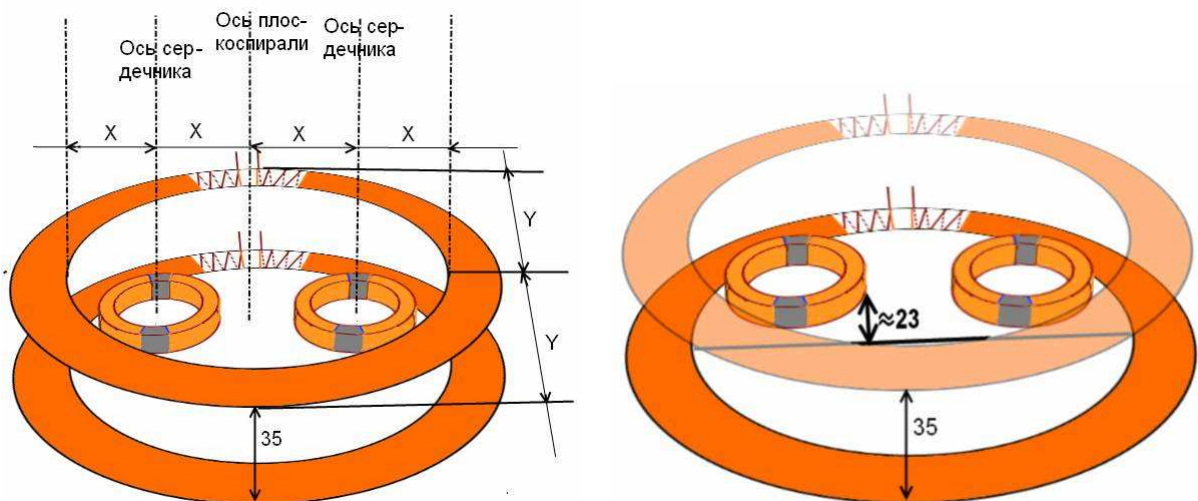


side view

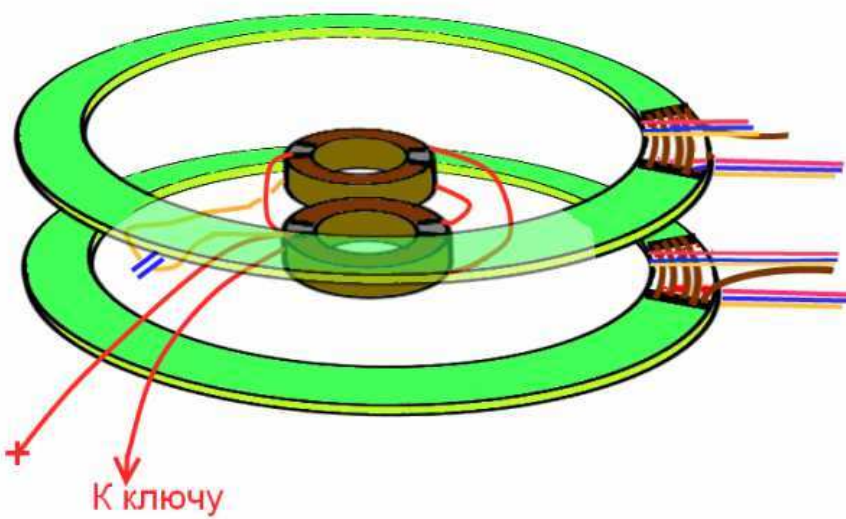


The arrangement of coils inside collector. Top view. See photo.

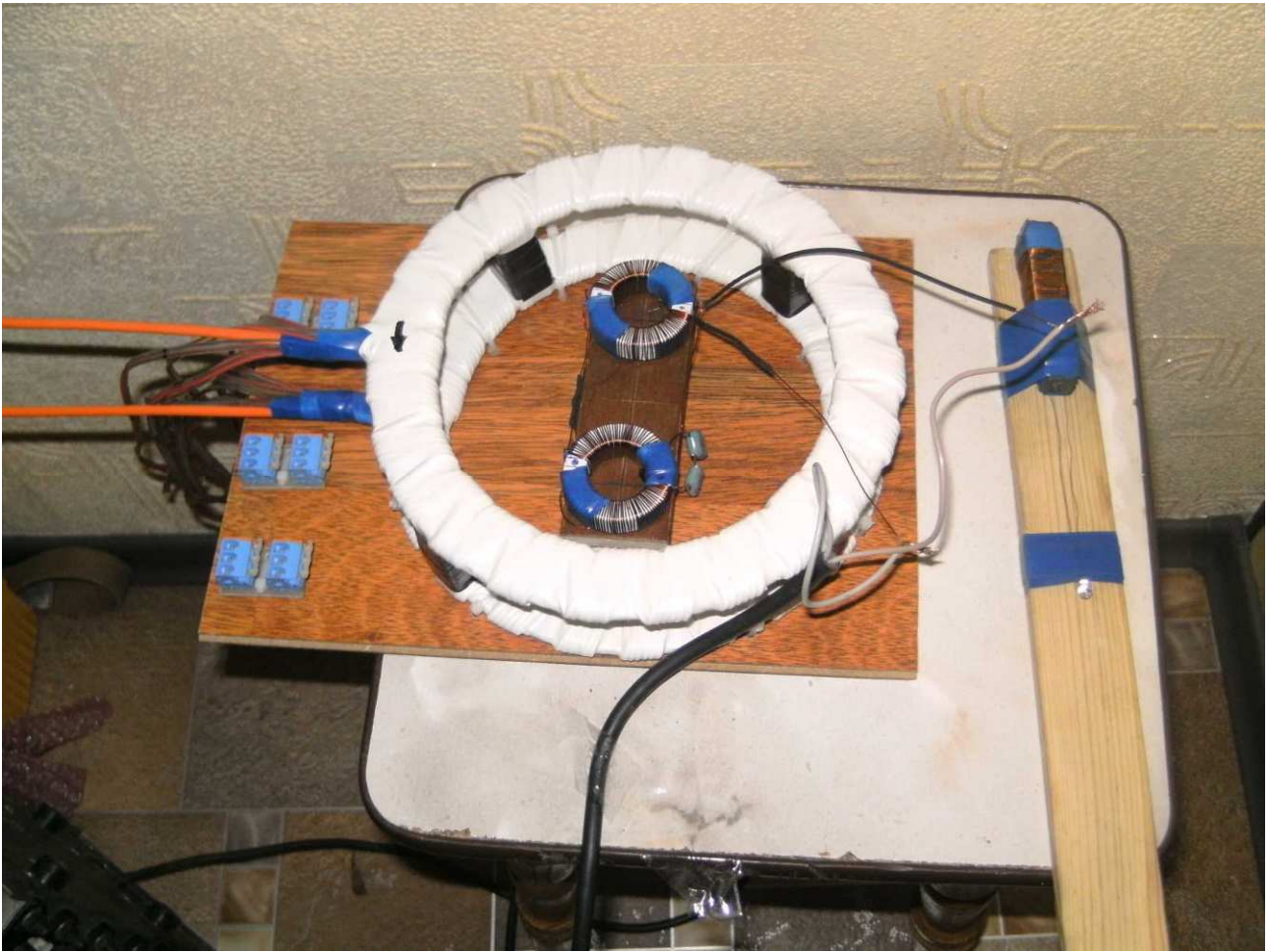


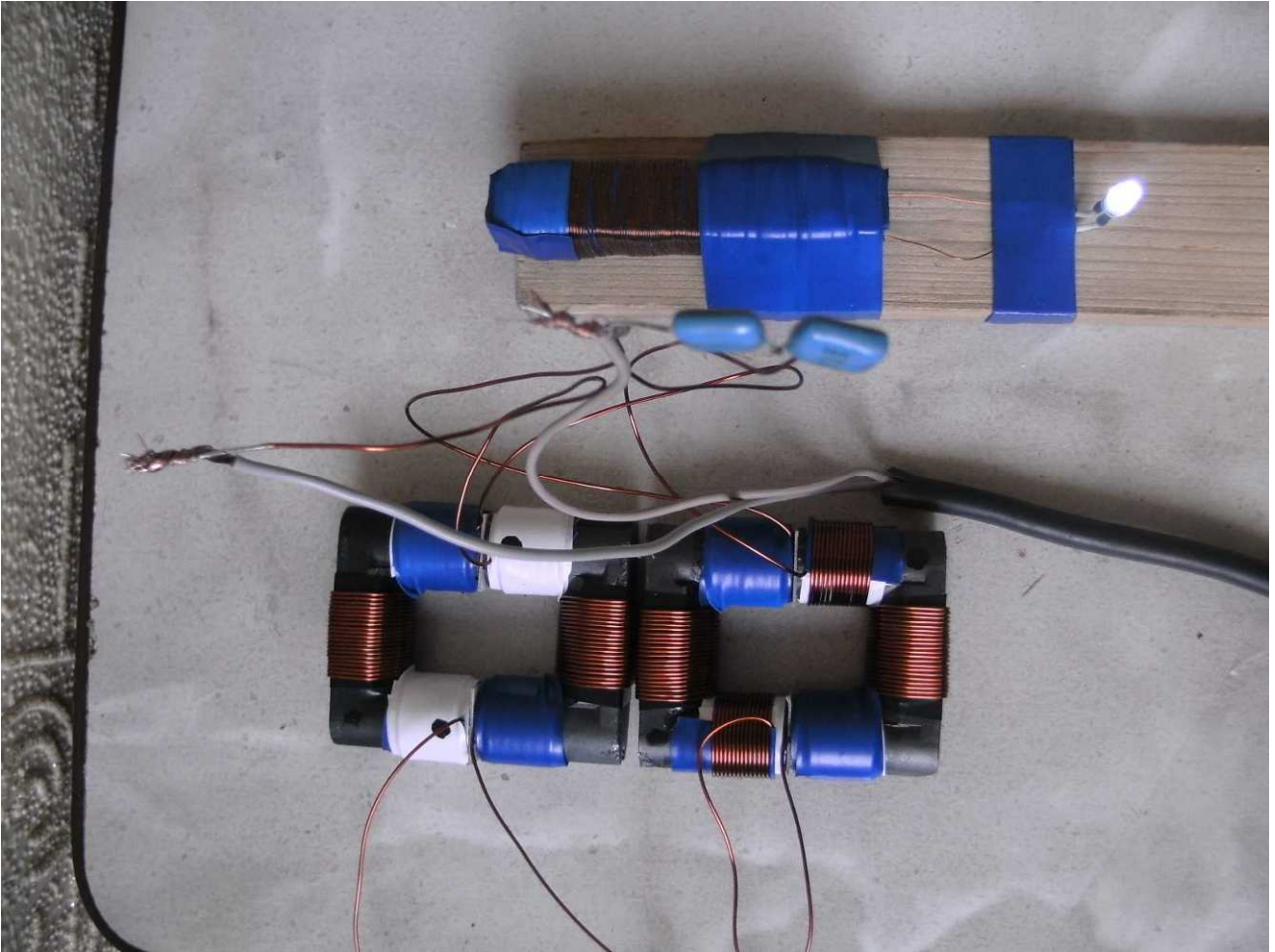


top view









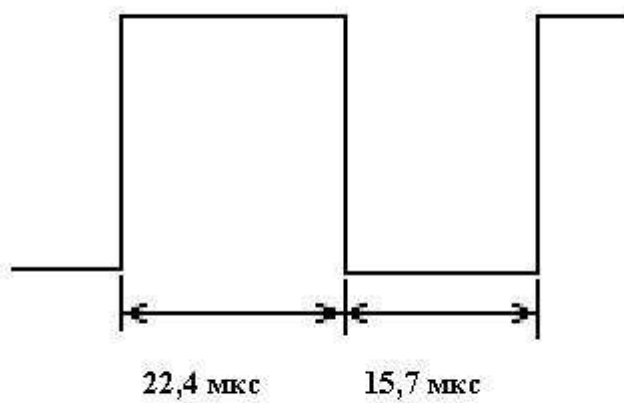
kvr09 Another option: coils on cores from old TV



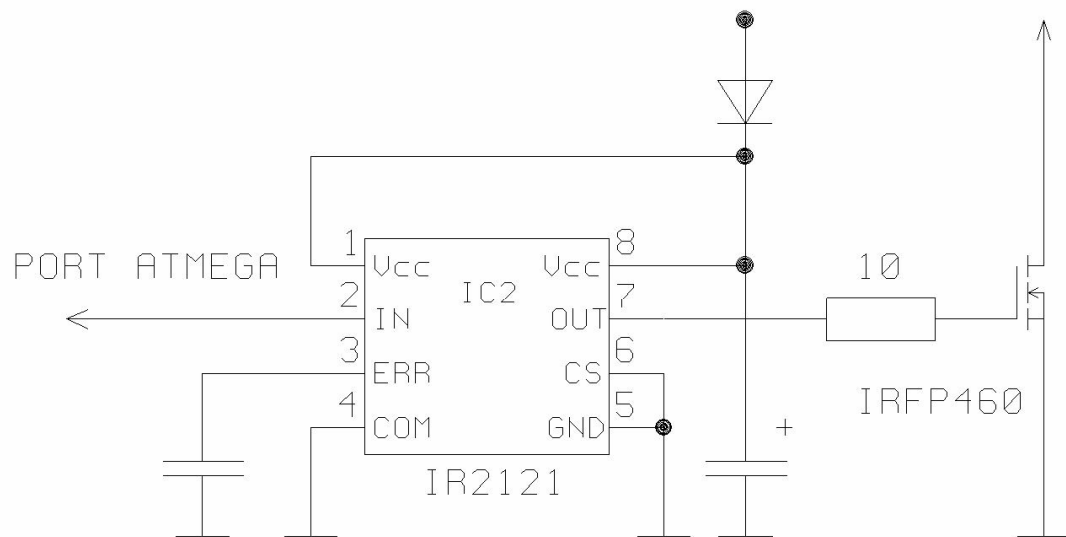
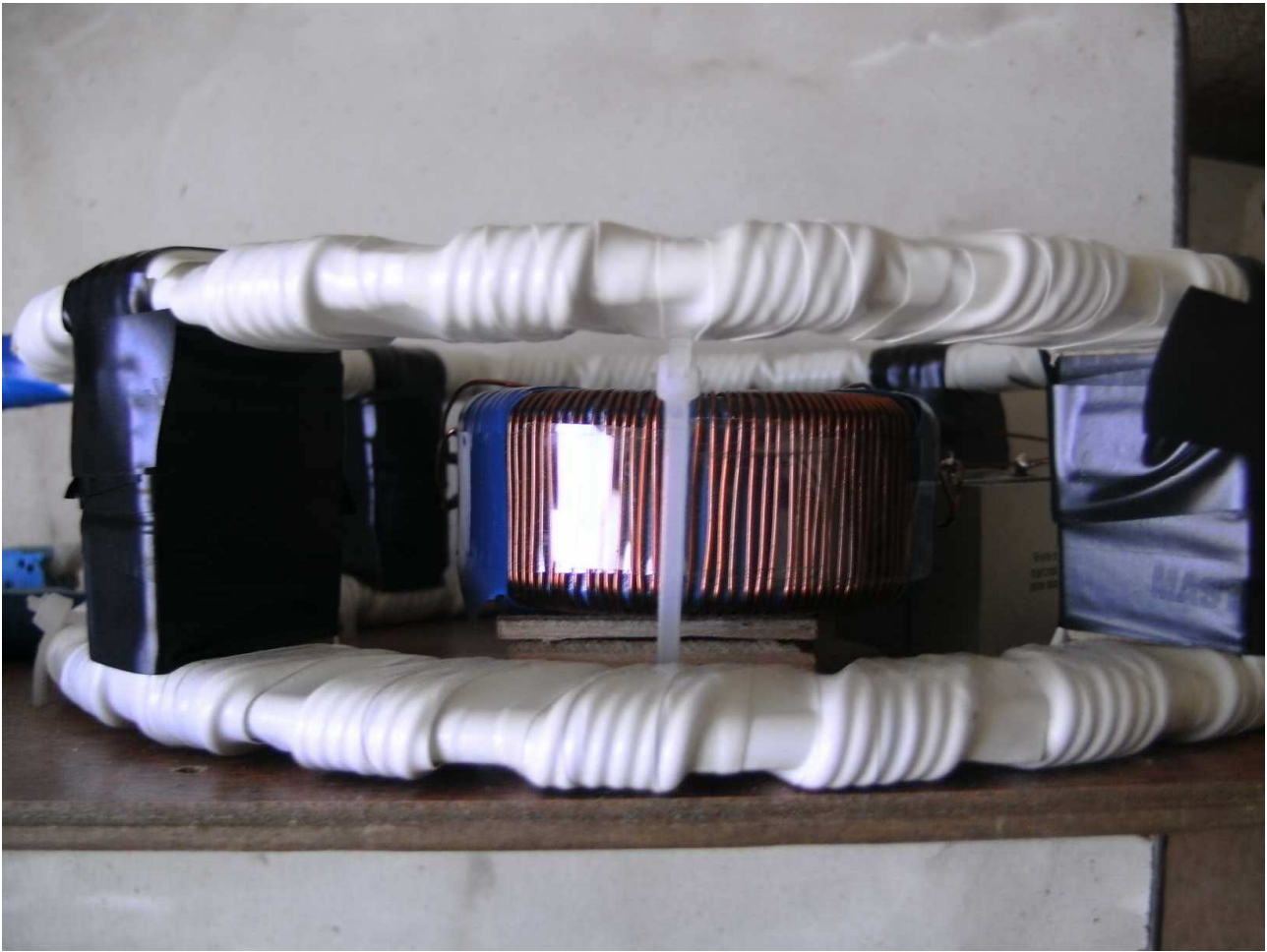
kvr09: Parameters when using ring cores N87 R63\*38\*25, wire 0,71 мм, capacitor 0,05 uF, two in series K78-2 1000v 0,1uF.  
Frequency 26,247 khz, duration 22,4/15,7 us, current consumption 0,9 A, amplitude on capacitor 300v.



ring core



Driver pulses



driver for magnetic field source



## Enclosure

Let's continue.

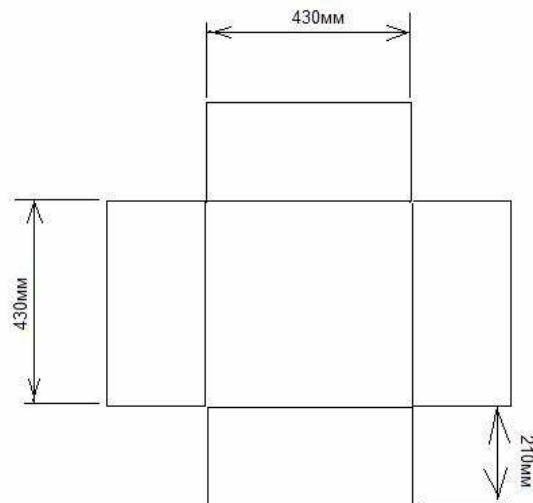
We need make box for "a black cat", see photo.

I used galvanized metallic sheets which are sold in any store that sells metal sheets for roof for the construction of houses.

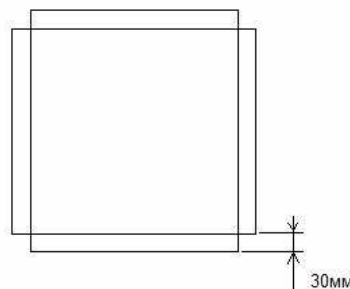
Build order on the photo. To impart rigidity corners I used a decorative corner from duralumin, which is sawed into 4 parts, dimensions shown in the figure number 1. Fasten corners with rivets. Dimensions of the box cover are made with a small allowance of 2 mm on each side so that it was setting free box. But you can not make allowances, for example, I, clipped to a bevel edge of the upper parts of the edges of the box and tucked them, departing from the upper edge to 3cm.

On one of the walls of the box set technological hole for wiring and oscilloscope probe. In the opening tap inserted piece multilayer tube 16mm diameter. On both sides of the plane wall of the tube is secured by means of two clamps.

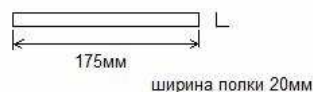
Regards Michael



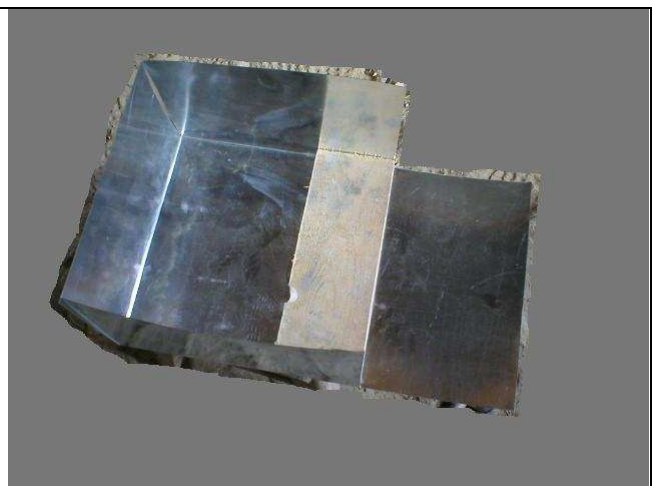
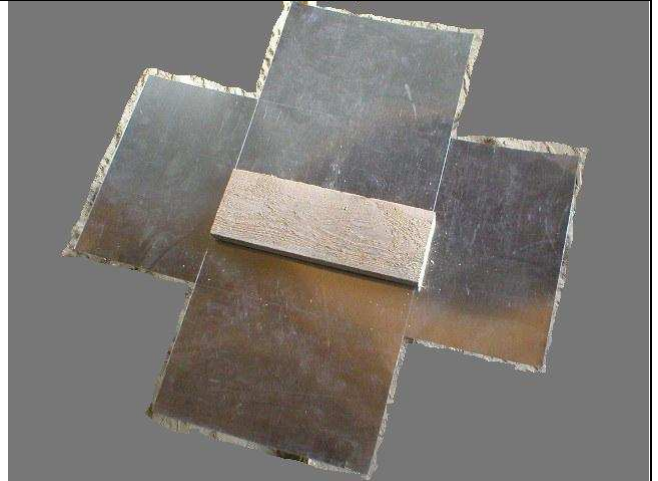
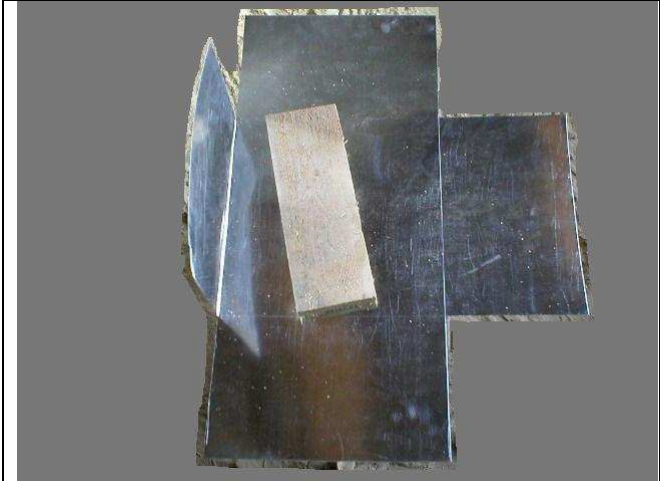
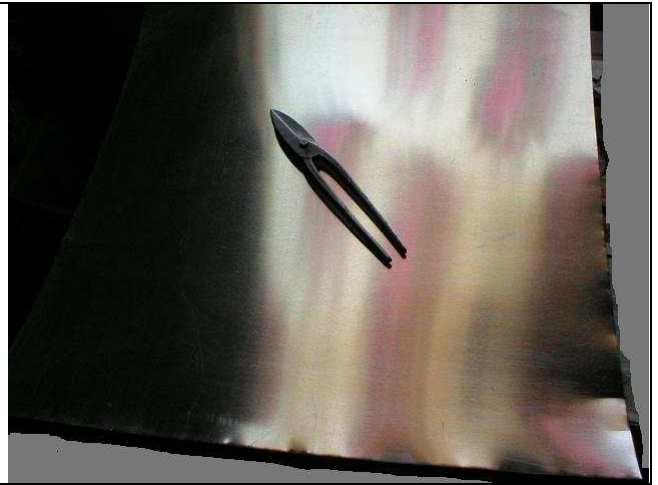
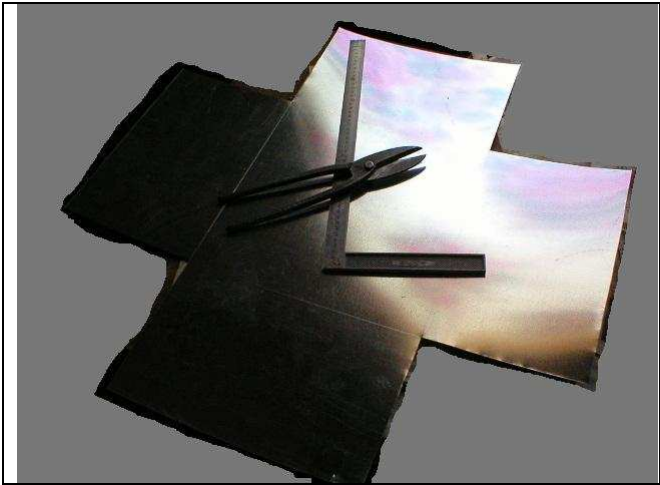
Выкройка из оцинкованной стали



Мебельный декоративный уголок из дюралюми 4шт. используются как ребра жесткости







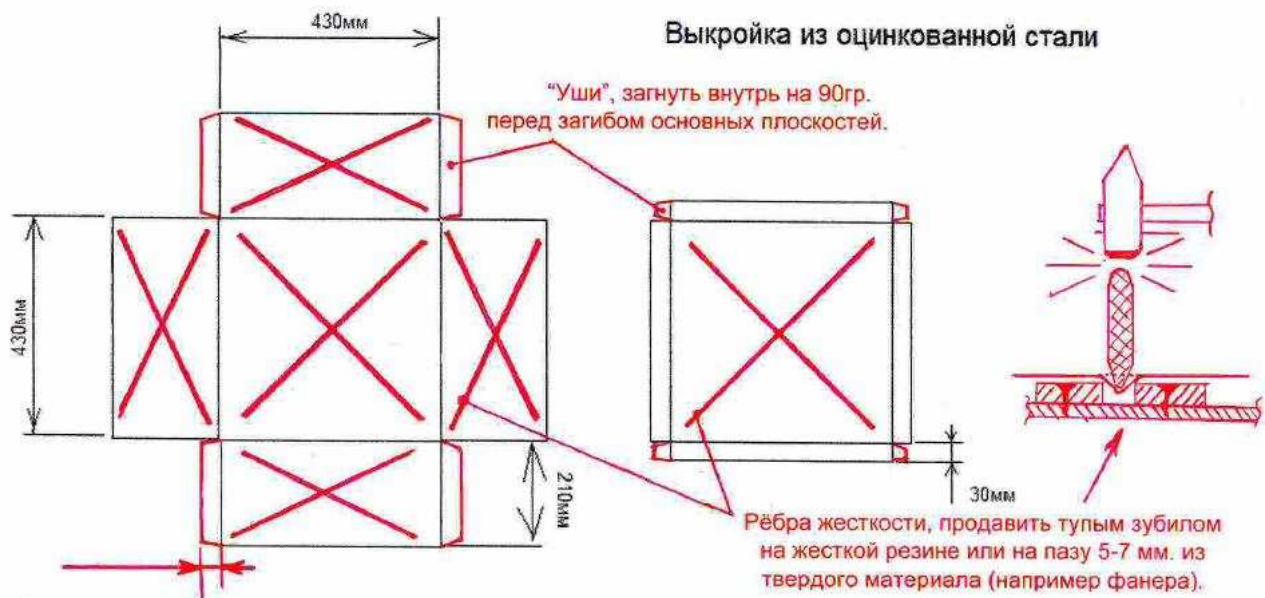




Usually used for shielding EMI shielding. This concept refers to the linguistic uncertainty, making some subjectivity in the perception of the world. In fact, it is used to create a certain degree of encapsulation processes occurring inside the external processes. While not much bother at this and consider that we are using the "box for a cat", as if we isolate the total system of the processes in the TPU from our inertial reference system. And yet, you will gradually, get used to the fact that we are dealing with quantum kinematics and GRT here is particularly significant.

Q: Can we use other material, duralumin or other metal?

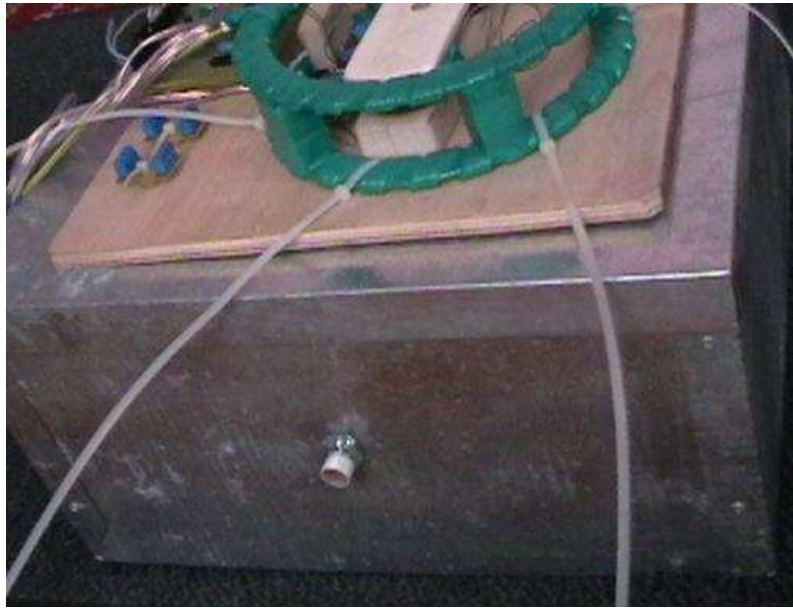
You can use any material in which it is possible circulation of eddy currents. In other words, material with high electrical conductivity. I would prefer non-ferrous metals such as copper, but in the absence thereof, have to use what is at hand. As they say, went to any commercial organization that trades decking and bought what is available.



stiffeners are shown in red



box from old equipment can be used also



## Wiring diagram

Now calculate the average length of the circumference of the collector, divide the value obtained in four parts. Measure this 1/4 of the circumference on the protruding end of the mean diameter of the collector and the excess cut off, the same with the second collector. Fold the ends of the collectors (advocating a plywood substrate) since the photo. Treat the ends with a file.

How to connect the wires in “Audio” cable shown on Figure 1.

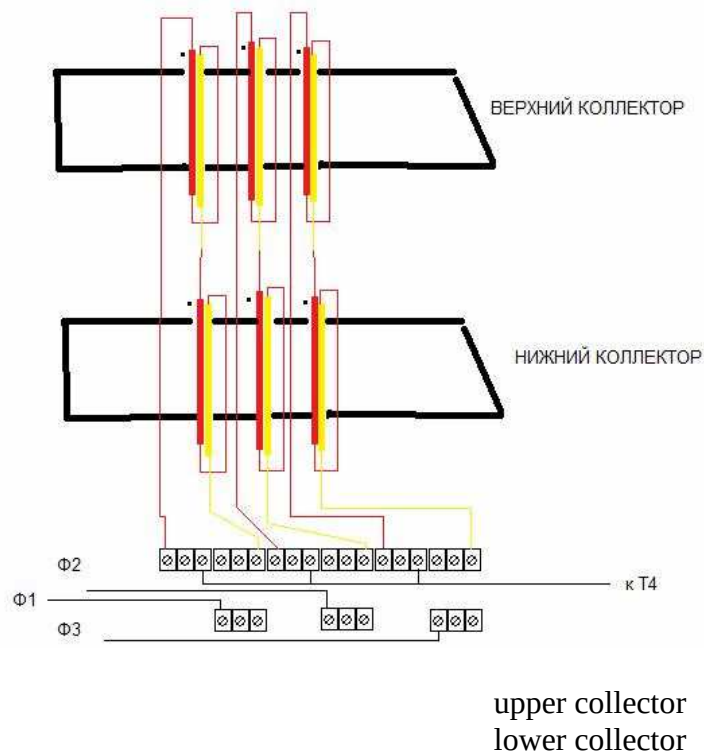


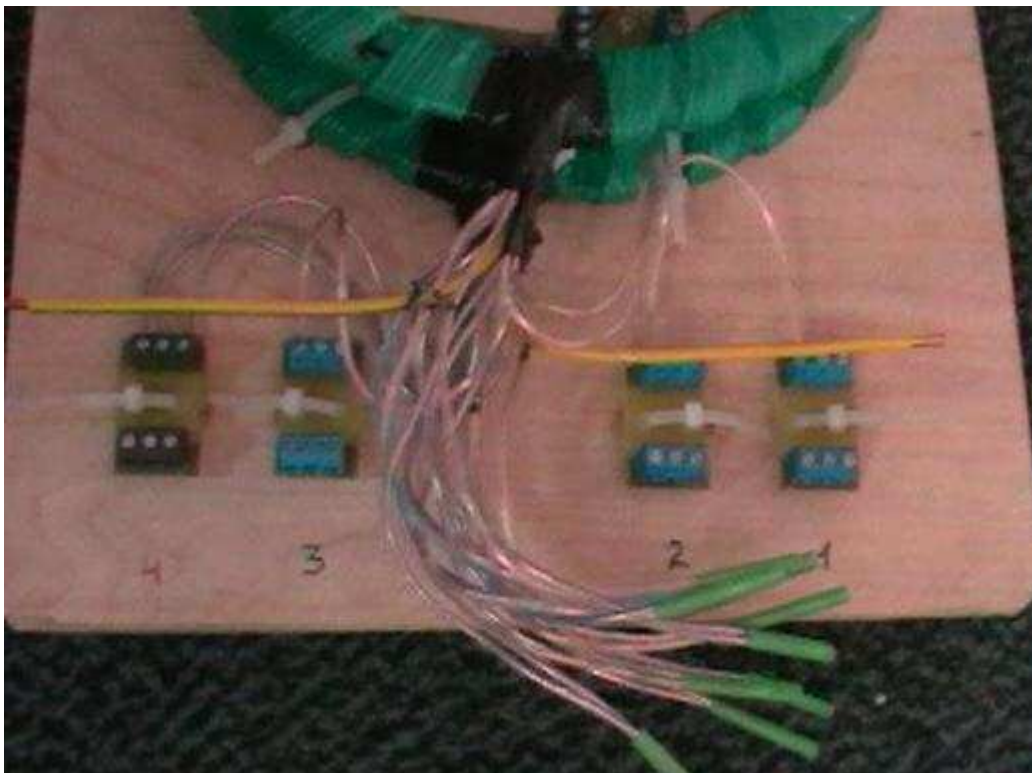
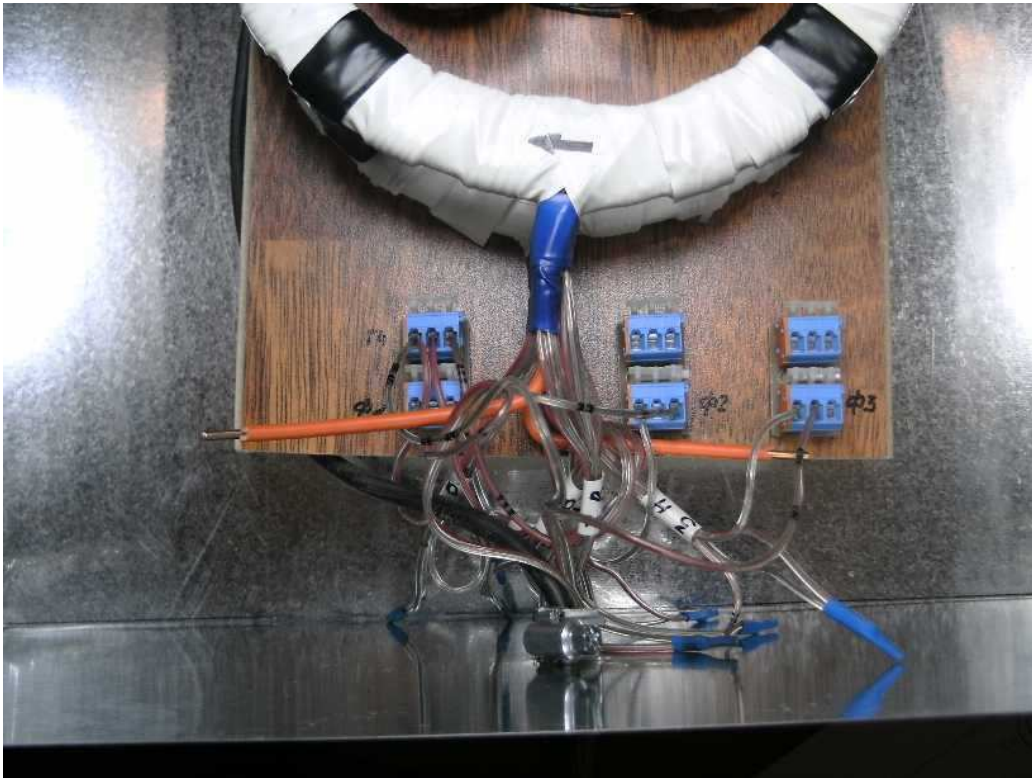
Fig1.





TPU is placed inside the box and put something under his wooden base, thick book like Tolstoy's War and Peace, so that TPU located approximately uniformly far from all interior surfaces of the box.





## ***Theoretical problem***

Now a small task for theoretical physicists.

Let have in experimenter inertial system long conductor with current (collector) of the spiral on the ring circumference and motionless, and a positively charged particle moves with velocity  $V$  along the wire in a circle in one direction at a distance  $D$  from the collector. Cross section of the collector sufficient to assume that the resistance of the conductor is very small. In this case, we can assume that current-carrying conductor creates a magnetic field only.

In this system, the report current-carrying conductor creates an electric field, as the linear charge density of the ions and the conduction electrons are equal in absolute value and opposite in sign. Now consider another situation where the experimenter is in a different frame of reference that moves relative to the first frame of reference with the speed of a charged particle in the same direction. In this case, the charge is fixed in this frame and the magnetic field conductor with current it does not work. In this case the charge in the force of gravity, as in this case, the conductor is not electrically neutral, since the positive ions move in relation to this reference system, with some velocity  $V_1$ , and the negative conduction electrons move in the same direction as the ions, but with the speed  $V_2$ . I note that the relativistic effects may not necessarily at very high speeds, physics confirms this. In this case, the drift velocity of the conduction electrons is very small. However, the relativistic effect is very large, since the concentration of conduction electrons in the reservoir is very large.

Question: What you need to do the conversion to the experimenter, while about a box for a cat was absolutely sure that the positively charged particles located inside the box against him to be alone, and does not move (and all appliances experimenter confirm this)?

Sincerely, Michael.

## **Next coil**

Michael: Hello everyone,  
while I'm busy , do some of the following materials acquisition .

1. Stainless wire (used for welding) diameter of 1.2 mm length of 15 meters. Unless it is available at that diameter. For example, if you able to purchase a diameter of 0.6 mm, while the length has increased by half, in other words you need to purchase 30 meters respectively . The smaller the diameter , the more wire length in proportion. But it is better closer to the diameter of the proposed me to the parameters of our devices were similar when adjusting.
- 2 . Enameled copper wire, any brand of diameter in the range from 1 mm to 1.7 mm to 30 meters
- 3 . Shrinkable tube diameter of 1.5 mm. 14 pcs. They usually go to 1 meter lengths.
- 4 . Heat-shrinkable tubing of 3.5 mm diameter. 2 pcs.

We are coming ahead of winding.

PS: We will solve all the issues with phasing, capacitors and other problems later when configuring the device.

Sincerely, Michael.

X: Michael! We're glad you're here!

Please specify: Welding stainless steel wire exists two types - magnetic and non-magnetic.

What to buy? Can the amount of this wire, with another being acquired diameter recalculated on the basis of equality of the volume of material required?

Michael: Buy nonmagnetic. I have nonmagnetic and without a layer of copper.

## Goodbye

Hello!

What I think and what we decided, how to proceed with the EOC. Here our plan of action.

We are now working with the EOC phonon mover for Fliper (Fliper - this unmanned flying vehicle) which we want to show in 2011 at the Annual Meeting of small aircraft in Moscow.

At the same it's time I have obligations to you, which I voluntarily took upon his shoulders. EOC angry on me and says that I'm distracted by trifles and do not do my specific responsibilities and in addition still hung up on me all the additional telemetry.

It is for this reason, so long stretches this publication TPU. Special photographic materials for the manufacture of devices at different stages of its assembly I have. So you have to make it again and it takes time, and it now sorely lacking. On the other hand, even if I had the chance to put all the stuff you would probably not his and began to repeat, it is quite difficult to manufacture and customization. You never know what is printed on the Internet. And so gradually the steps, from simple to complex and not notice how it will collect.

Now about the personalities that attack, for me it's mosquito bites and no more. Until it was not for my country, I'm not going there to listen. Lived all his life in the country and all foreigner. If this stasis2 as he put it in a letter to spit on me. That's his problem. I circulated the topic is not imposed, and not impose. I know it do not know, do not aspire to, and not eager to meet him.

Second, blame me, I did not warn people that it is dangerous. This is a blatant lie. I first started with this, and that all warned that it may be dangerous to health if you do not follow safety precautions.

Now our decision. I will not moderate the forum, no time. Decide who will moderate it, I think the admin will help in this matter. If nobody want, then I will have to remove the thread.

All materials on the device TPU will immediately publish as much as possible in this thread if the subject will cease to exist, then the information will pass through and kvr09 Igor63, as they were the first who responded to my suggestions, and were the most consistent in the assembly of the device. I will always be available at RTE-Galaxy@yandex.ru pre recommendation implemented through notification from kvr09 Igor63 or by Email.

I have kvr09 Email, Igor63 I hope, just give me your Email via private message.

That's all.

Sincerely, Michael.