

FEG. How to catch the effect when tuning by Sergey Alekseev – transcript rev.2  
<https://www.youtube.com/watch?v=s1ves5ukyVI>

link contains several unrelated videos linked together

photos at the beginning

- Tesla HVcoil inductance 292mH (?)
- Antenna coil to gradient coil capacitance 40-43pF (?)

transcript is for first fragment 0 - 4:10

00:15 Hello Nail, want to show specifically  
00:20 a certain thing that you catch the effect  
00:24 at once, well, push pull with  
00:27 controlled kacher and voltage regulator  
00:31 here inside is done, but for now it's in  
00:36 so far, it is not tuned yet  
00:39 like this, closer-further adjustment to do  
00:45 that's it  
00:47 this is how wire will be 1.2mm  
00:50 diameter wire, aluminum  
00:53 this is copper, this is also copper everything well this is  
00:58 completely all copper, this HV coil  
01:01 aluminum, with copper doesn't work well  
01:06 I want to show one important point and so  
01:09 there is a blue trace here we have it  
01:12 it is a collector  
01:19 to K2611 with other transistors is bad  
01:21 it turns out or K1358  
01:24 it practically does not heat up especially, power  
01:29 it is on the kacher that the  
01:32 the effect turned out right here in the coil  
01:34 the effect of amplification has occurred in general  
01:40 it is necessary to tune the voltage and  
01:44 I put the  
01:47 LM2577 and will it be such a regulator  
01:50 it will be clear exactly what the effect will be  
01:55 you tune frequency  
01:58 about 1.2 from 1.1 to 1.4 and  
02:08 so we look at power supply 26  
02:11 volt it can be 22 volts depending on  
02:13 what kind of transistor and now  
02:15 come on like this  
02:16 we will squeeze it all when this is such garbage  
02:20 is and not now we will reduce  
02:24 voltage  
02:31 but there are no special ones  
02:34 we raise it above the norm, well, now it's not particularly  
02:40 apparently I have already set it up here because it  
02:43 it's very hard to knock down  
02:44 there is no jumping, it means we have to  
02:47 lower now lower it smoothly so here

02:52 only in this position  
02:54 the effect will manifest itself in other words  
02:56 this is a very narrow moment in frequency and  
03:00 voltage and duty cycle  
03:02 if these are not respected means  
03:05 will not work, just about 24  
03:13 volt nothing about  
03:15 25.7  
03:23 30 volts no effect  
03:27 this is 26-27 volts for power supply now we  
03:31 we will appear directly check on kacher  
03:42 ok sorry one hand is not comfortable so  
03:48 here are 25.11 volts well, put it on  
03:52 the other transistor will be the voltage will be  
03:54 other  
03:55 put other transistor  
03:57 it will be different again  
03:59 everything will depend on Tesla itself  
04:02 important Tesla is the most important part in  
04:06 FEG is Tesla  
04:10 well in two words so  
<cut>  
04:15  
06:04 I have to ground wire ...  
<cut>  
06:05 (some audio book playing on background)  
07:10 oh I have to expand capacitor  
<cut>  
07:33 Hi, Cyril  
07:35 look what I found, here we have 15  
07:38 kilohertz coil, a regular one  
07:42 standard and look at  
07:46 spectrum analyzer here 15 khz and here  
07:51 I counted  
07:51 if the harmonic is even, let us divide by  
07:56 32  
07:57 then our power will turn out somewhere in  
07:59 coil about 2 kilowatts if we  
08:02 do odd  
08:04 for example, we set the peak so the right peak  
08:10 now we will get to that for example  
08:17 let it be this peak 465, means 400...  
08:27 465 divided by 15 kilohertz equals 31  
08:34 that's why it turns out in one case 4  
08:38 kilowatt otherwise 2 kilowatts  
08:42 so here is the harmonic  
08:45 must be odd, so the counters  
08:49 must be done for an odd harmonic  
08:54 this is how we get a coil but  
08:59 the inductor does not need to do half of it  
09:01 half or 1/4 all one quarter  
09:04 doing it means the frequencies will be

09:06 multiples of 1/4 by 2 we must be doing one

09:09 third

09:10 inductor means 37 and a half and this is 12.6

09:14 should be like this and like this power

09:17 it turns out more

09:19 I came to this conclusion

<cut>

photo of spectrum analyzer

text: point 4 Tesla coil frequency 450khz

push pull frequency 18khz point 1

duty factor should be 15-18%

on ferrite transformer coil 4 turns

adjust capacitor to resonate at 90khz point 3

<cut>

09:49 so hello Cyril, here you are

09:52 plug and what I want to show I want to show

09:56 that's 37.5 meters, you see that

10:00 there is a half and a wire that your

10:02 wire, you know which wire you sent

10:04 is also 37m and a half meters here

10:09 yellow here he goes walking and here he is

10:13 goes over heater element here on this one

10:16 over heater element and here we have it kacher with

10:23 voltage regulator

10:25 push-pull from the duty cycle, that's it

10:28 nothing elsr, yoke and capacitor for

10:31 resonance, want to show the effect here

10:34 look now turn on the yellow beam this

10:40 our exit, blue, this is here it lies near

10:46 in short in antenna whine inspect I want to show

10:51 effect how to turn off kacher now

10:54 emitter base I just short-circuit, silence

10:56 closing

10:57 look at this, boom, everything

11:02 died, nothing going to heater element

11:08 there is something there you can say nothing

11:10 goes here

11:13 please, such an effect

11:32 turned off kacher, turned on

11:36 and look

11:44 it works more or less somehow steadily

11:47 I adjusted, duty cycle, here duty cycle

11:49 about

11:50 on push-pull 15 percent 15-18

11:55 so somewhere

12:08 here you detune multiplicity and everything went

12:20 that's great

12:40 from

12:46 Well, here's the effect, the result is obvious

12:52 boom oh

13:01 it's grenade squeak, not yoke

<cut>

13:15 June 2015 here I come to what  
13:27 here heater connected so is connected  
13:31 here is the resonant circuit, here it is, this here  
13:40 goes this one, here goes serial  
13:46 resonance capacitor and here  
13:48 resonance capacitor, nothing more here  
13:49 the yoke is like everyone else and this scheme is the one that  
13:55 leaked by accident and we all got it  
13:59 let's turn on  
14:05 now it turned on the amplitude is low  
14:09 there almost nothing  
14:13 turn on the kacher here's the power  
14:19 I need to adjust a little, it squeaks  
14:31 so now this  
14:41 blue probe this is this Tesla  
14:43 one megahertz, look a  
14:47 this 3.4 and  
14:49 2.4 megahertz, somewhere like that  
15:05 let's do it like this, it's better, I short  
15:11 emitter and base on transistor  
15:13 one time and look what kacher is doing  
15:18 oh  
15:41 works – switched off  
15:50 well, like that