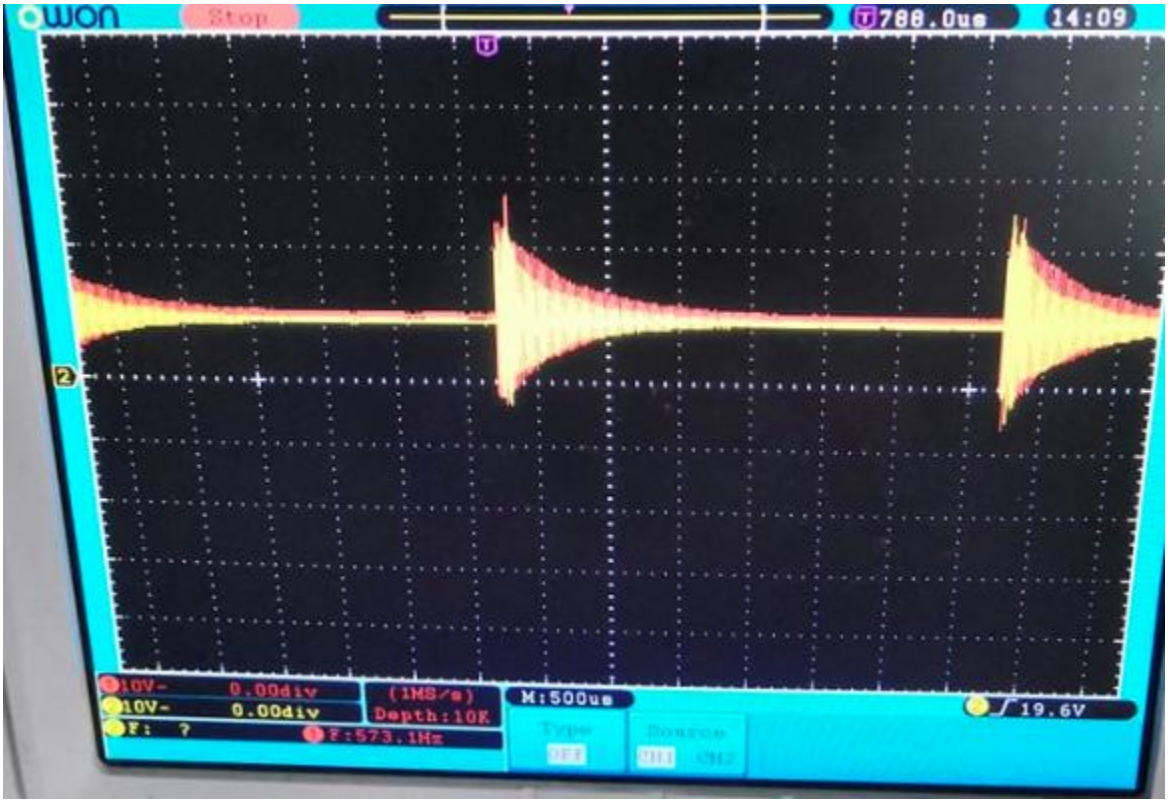
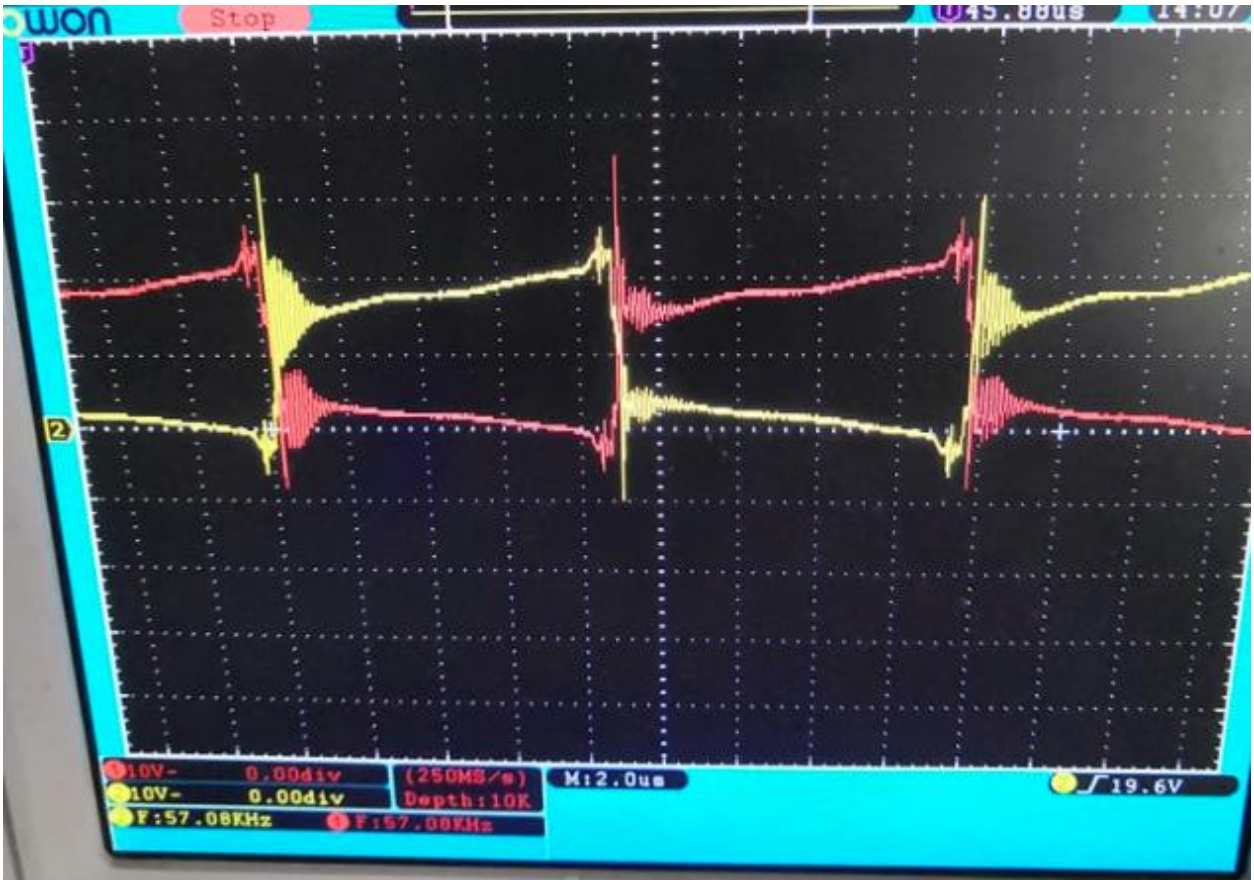
DRSSTC II WAVEFORMS



INVERTER VOLTAGE, common ground (GND of the inverter), yellow and red waveforms are the inverter outputs. Input DC bus voltage: 20V. 10V/div



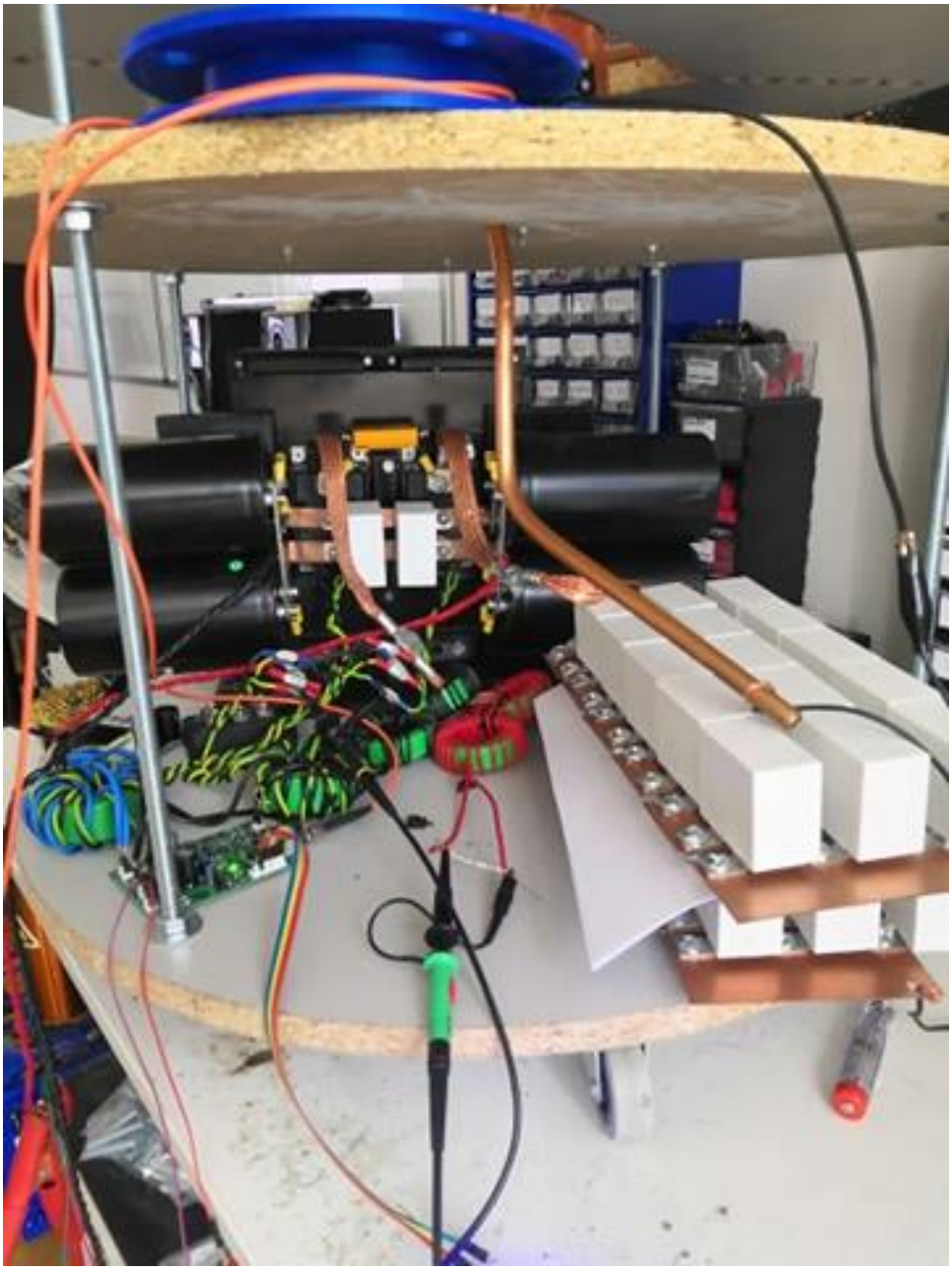
Here is a closer look at the inverter voltage, still 20V input and 10V/div.

Here is yet another closer look at the inverter voltage when switching polarity. 20V input, 10V/div

Here we have the inverter voltage again, with - Math function in the middle. 20V input voltage and all the waveforms here are 20V/div. The yellow and red waveforms have been offseted.

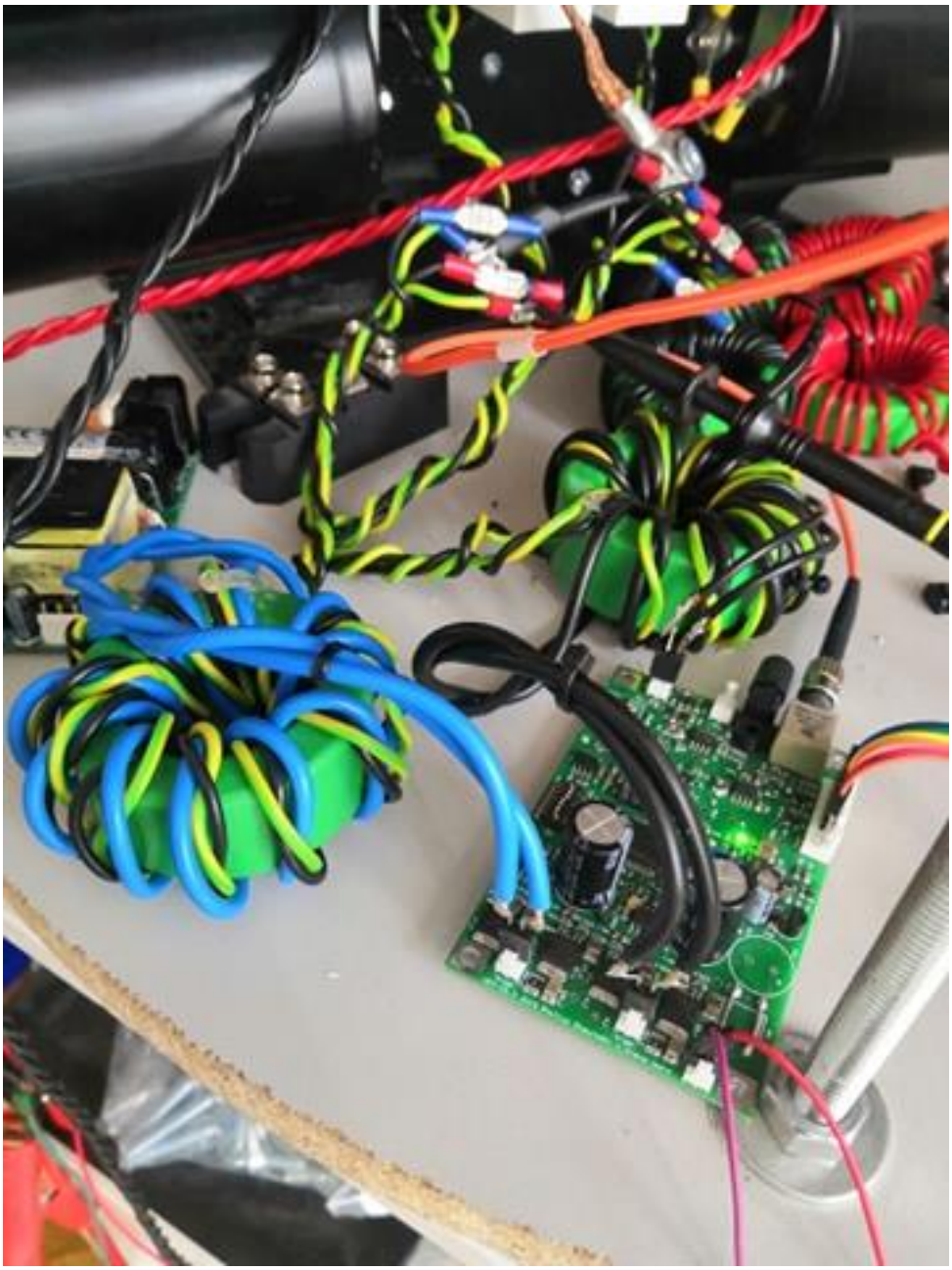
Here the yellow waveform is the Gate voltage on one of the IGBTs on the lower side. 10V/div. The Red waveform is the primary current, which is quite noisy. It is 50mV/div with current transformers being 1:30:33 = 1:990 ratio loaded with 1Ohm resistor. There is about 150mVpk so the peak current on the primary is about 150mV*990 = 148Apk. Which scares me a lot, since that's quite the current for only 30V input.

Here is the 2 meter coil sitting on my table :P



This is the inside of the primary circuitry

Closer look at the the inverter IGBTs on the heatsink, you can see 10kOhm power resistor for MMC charge draining and 2 Snubber capacitors (the same type i use for my MMC)



Here is the driver with 2 large GDTs. 10 turns of wire with insulation rated for 5kV.

Here are the feedback (black) and OCD (red) current transformers. Cascade transformers 1:33:30 ratios.

Here is a closer look at the primary and secondary. The secodary is definitelly not perfect, i’ve wound it by hand and there are some imperfections. We will see if they will be problem at higher power levels, if yes then i will wind new secondary this time with no imperfections.