

Figure 1. Photograph of the interior of 24 stage Marx generator. The assembly was removed from the enclosure that also provides the return (ground) lead of the current path.

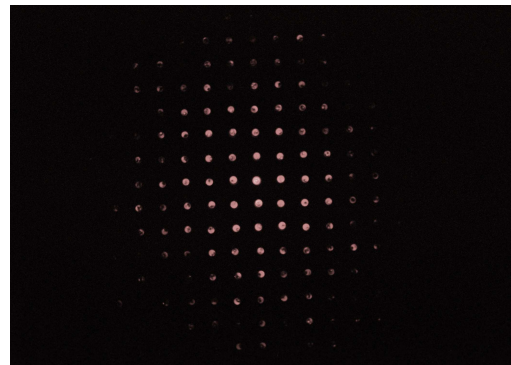


Figure 2. Neon bulbs ignited by the RF/HPM. The bulbs are placed on the wooden board. The separation between the bulbs is 0.75". The bulbs are subject to the electric field with the peak value of 150 kV/m

Experimental conditions

- Experiments are done with 24-stage Marx generator that has three capacitors per stage. Each capacitor has 2.7 nF.
- Capacitance per stage is 8.1 nF
- Charging voltage used in Figs 2-4 is 26 kV per stage
- Energy stored in the system is 66 J

Method and Applications

- Direct approach of RF/HPM generation is applied. 815 MHz is the main frequency in the emission and produces the electric field up to 200 kV/m. Frequencies at 1.49 GHz and 2.49 GHz are also present, but their contribution to HPM generation is not significant.
- The system can be used in the experiments related to the protection of the electronic infrastructure.

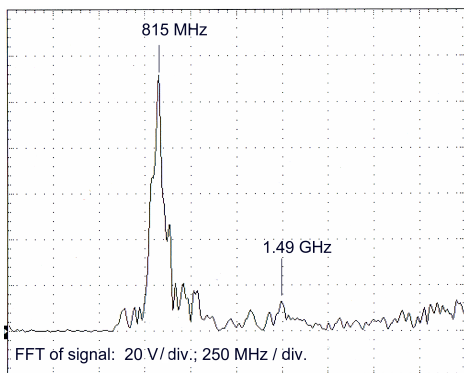


Figure 3. FFT of the signal shown in Figure 4, Frame A. Here, the low-pass filter of 1000 MHz was not used.

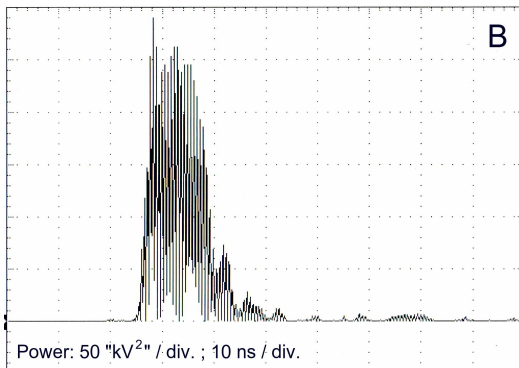
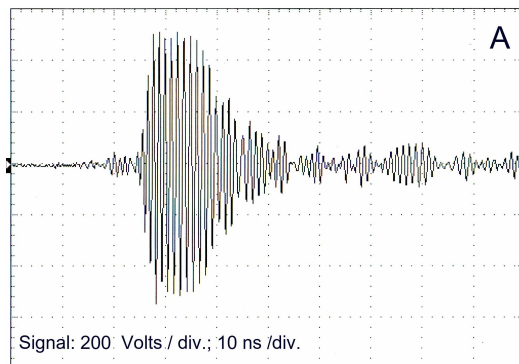


Figure 4. Frame A. The signal is recorded by the single turn loop of 1.89 cm in diameter and with low-pass filter of 1000 MHz.

Frame B: The relative waveform of the power is obtained by multiplying the signal shown in the Frame A by itself.

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