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High-Current Test Stand for HPM Sources Testing Based on the Marx Generator

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Test stand complex for the testing of land and aerial based HPM sources is described. The stand utilizes low-inductance Marx generator operating in the repetitive burst regime with a rate 1-20 pulses/sec and total energy in pulse of 3kJ/pulse at 70 Ω load. Marx generator produces pulses with the risetime of 10-12 ns, output voltage and current 250-650 kV and 10-55 kA, respectively.

Marx generator utilizes low-inductance pulse capacitors, connected in pairs and installed in the common casing per pair. These capacitors are charged by two bi-polar capacitor charging supplies with 80kJ/s charging rate each. Marx generator stages are switched by low inductance high pressure spark-gaps with impulse gas purging. The spark-gaps are filled with N_2 , SF_6 gases or their mix.

The stand complex is controlled by the computerized system, which includes system of acquisition, storage and preliminary processing of operational data. The system utilizes proprietary software.

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