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1P68 - Compact Rapid Capacitor Charger for Mobile Marx Generator Applications

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Abstract - The purpose of this paper is to show the work being performed to develop a compact rapid capacitor charger suitable to charge Marx banks to voltages ranging between 5 kV to 10 kV. The capacitor charger is being constructed with mobility in mind; for this reason it is powered using a series of high current LiPo batteries. A detailed description of the different system components is presented to familiarize the reader with rapid capacitor chargers. Additionally, a sketch of the proposed system packaging is shown along with volumetric and specific power densities. These figures are of paramount importance in mobile applications. Results of the preliminary tests are discussed outlining the performance achieved while charging test capacitor banks. Future improvements to the system are shown and their implementation paths discussed.

Authors: Dr BILBAO, Argenis (U.S. Army Research Laboratory); Dr BAYNE, Stephen (U.S. Army Research Laboratory)

Presenter: Dr BILBAO, Argenis (U.S. Army Research Laboratory)

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