

Custom HV and LV Supplies for LHC Experiments

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Abstract

CAEN has strongly invested its resources, in the last three years, in the development of a Power Supply system (SY1527) totally dedicated to LHC applications. The first applications of this system, currently under test at CERN Electronics Pool, include both standard boards and custom supplies. The standard boards technology, acquired by CAEN in 20 years of experience, is now employed in the development of custom systems that allow to power up both the various detectors and the relevant front end electronics. The radiation and magnetic field levels impose on all the remote distributed systems several design criteria, including safe and reliable operation. Existing custom supplies and new architectures, based on the new SY1527 system, both for high and low voltage generation and distribution in presence of moderated radiation and magnetic fields levels, will be presented. Power dissipation issues in the experimental halls are critical. New solutions for a more efficient energy transfer are under study, in particular for what concerns low voltage supplies.