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A fast 10 kA current switch for High Temperature Superconductor accelerator magnets

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INFN developed at LASA lab (Milano, Italy) a fast current switch in the framework of the EuCARD-2 project. A full prototype of a 10 kA fast switch based on insulated gate bipolar transistor (IGBT) modules operating in about 1 ms has been developed, installed and tested in the existing power supply at LASA lab. The upgraded power supply is meant to operate on the EuCARD-2 high temperature superconductor (HTS) accelerator prototypes. The design, the construction and the test of the fast switch are reported. The preparation of a test bench to test HTS magnet in a range of temperature from 4 K to 80 K is also reported.

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