

The TOTEM Roman Pot Motherboard

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The TOTEM Roman Pot Motherboard (RPMB) is the main component of the Roman Pot front-end electronic system. It is mounted on the Roman Pot between detector hybrids and patch panel. The RPMB main objectives are to acquire on-detector data and trigger information from up to 10 hybrids, to perform data conversion from electrical to optical format and to transfer it to the next level of the system. It also distributes the control information to the hybrids and collects different types of information like temperature, pressure and radiation inside the pot. The TOTEM Roman Pot Motherboard, its components and connectivity are presented in this paper.

Summary

The TOTEM experiment has three sub-detectors: Roman Pots (RP) with silicon strips, T1 detector with Cathode Strip Chambers (CSC) and T2 with Gas Electron Multiplier detectors (GEM). All detectors use the VFAT chip for tracking and trigger generation mounted on different hybrids. A Roman Pot hybrid contains four VFAT chips. The set of ten hybrids is build for every Roman Pot. The RPMB is connecting to this set via flex connections and glued to the flange. The presentation will give a detailed overview of the design and functionality of the RPMB components as a part of the front-end electronics in Roman Pot for TOTEM experiment.

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