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Development of the Readout System for Triple-GEM Detectors for the CMS Forward Muon Upgrade

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Summary

We will present the readout system being designed for triple-GEM detectors that should be installed in the CMS muon endcap system for the LHC high luminosity phase. The system takes full advantage of current generic developments introduced for the LHC upgrades: micro-TCA, MP7 and AMC13 boards, Versatile Link, GBT, etc. Some hardware components have to be specifically designed: the VFAT3 chip, the GEM Electronic Board and the Opto-Hybrid board. We report on the readout system design, the performance of the first prototypes of the GEB and of the Opto-hybrid and on our experience with the micro-TCA system.

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