

Electronics and Triggering Challenges for the CMS High-Granularity Calorimeter

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The High Granularity Calorimeter (HGCal) will replace the CMS endcap calorimeters for the High Luminosity phase of LHC and will feature 6 million channels. The requirements of the front-end electronics are extremely challenging: high dynamic range (0-10 pC), low noise ($\sim 2000e^-$ to allow MIP calibration through to end-of-life), pileup mitigation through 25 ps binning timestamping within a power budget of $\sim 15\text{mW/channel}$, as well as the need to select and transmit trigger information with a high granularity to off-detector boards. We describe the present iterations of the front-end and back-end electronics, including the hardware and studies of the algorithms to be implemented.

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No, this is an entirely new submission.

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