

# Characterization and verification of the Shunt-LDO regulator and its protection circuits for serial powering of the ATLAS and CMS pixel detectors

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The Shunt-LDO regulator has been integrated in the ATLAS and the CMS pixel detector front-end chip to implement the serial powering scheme which both experiments have chosen as the baseline option for the HL-LHC upgrade. The performance of the integrated regulators has been characterized and specific design challenges have been identified which are related to layout parasitics and shallow trench isolation (STI) stress effects. In addition the functionality of circuits which address crucial system level aspects like the protection against overvoltage/load and the regulator startup has been verified.

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No, this is an entirely new submission.

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