

# A Readout System for ALPIDE sensors of the ALICE Inner Tracking System Upgrade

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The ALICE experiment at the CERN LHC will install a fast, ultralight Inner Tracking System made of monolithic active pixel sensors (ALPIDE) during the ongoing second long shutdown of the LHC (2019-21) to improve upon the present physics measurements and provide insights to new measurements. ALPIDE is based on TowerJazz 180 nm technology and is a result of an intensive R&D programme over the last few years. Several ALPIDE prototypes with different design parameters were developed before converging on the final design. A portable readout system was developed at INFN Cagliari in collaboration with CERN to characterize and test the ALPIDE prototypes and the final sensor. The readout system was used to conduct comprehensive tests on ALPIDE chips and its prototypes in the laboratory and in beam testing facilities. These results helped to converge on and validate the design parameters. In this presentation we will discuss about the concept, features and performance of the readout system.

## Funding information

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