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Readout electronics for TPC/MPD of NICA project

The TPC barrel is placed in the center of a Multi-Purpose Detector comprising the interaction point of colliding beams together with other central detectors that provides the recovery and identification of charged particle tracks in the pseudorapidity ' s range ⊠η⊠≤ 1.2 in future NICA collider experiments.
Tracks in the TPC are registered by 24 readout chambers placed at both end-caps of sensitive volume of the barrel. Readout system of one chamber consists of set front-end cards (FEC) and one readout control unit (RCU). FECs collects signals directly from registration chamber pads, amplifies them, digitizes, processes and transfers it to the RCU. RCU functionality includes multiplexing data streams from 62 serial data links into one high-speed optical channel, clocks and triggers fan-out, system slow control e.g. possibility of FECs reconfiguration.
To ensure a good tracks reconstruction all 95232 electronic channels must meet stringent requirements such as signal to noise ratio - 30 equivalent noise charge < 1000 e-, power consumption less than 100 mW per channel.

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