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Front-End Electronics for TPC/MPD detector of NICA project

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Time Projection Chamber (TPC) is the main tracker of the Multi-Purpose Detector (MPD). The detector will operate at one of beam interaction points of the collider NICA (Nuclotron-based Ion Collider Facility) and it is optimized to investigate heavy-ion collisions in the energy range from 4 to 11 GeV/n. The TPC Front-End Electronics (FEE) will operate with event rate up to 7 kHz at average luminosity $10^{27} \text{ cm}^{-2}\text{s}^{-1}$ for gold collisions at 9 GeV/n. The FEE is based on the novel ASIC SAMPa, FPGAs and high-speed serial links. Each of 24 readout chambers will serve by 62 Front-End Cards (FECs) and one Readout and Control Unit (RCU). The whole system will contain 1488 FECs, 24 RCUs which gives us 95232 registration channels. The report presents current status of the FEE and results of the FEC testing.

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