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Development of the Readout Board for Highly Granular Neutron Detector at the BM@N experiment

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Baryonic Matter at Nuclotron is a fixed-target experiment at JINR, Dubna to study heavy ion collisions at beam energies up to 4 AGeV. The new Highly Granular Neutron Detector is being developed to measure neutron yields, neutron energy spectrum and neutron azimuthal flows at the BM@N experiment. Detector design employs time-of-flight measurements for neutron energy reconstruction. Data readout of the HGND will be performed using 100 ps bin FPGA-based TDC integrated into Readout Boards. Design of the Readout Board with 248-channel TDC, White Rabbit time synchronization, photodetector bias voltage supply and front-end controls will be presented. Results of the Readout Board prototype tests will be discussed.

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