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mPSD readout system at mCBM experiment

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The Compressed Baryonic matter Matter experiment (CBM) is one of the major experimental projects at the constructed FAIR facility in Darmstadt, Germany. It will explore strongly interacting nuclear matter at highest net-baryon densities in nucleus-nucleus interactions. A novel, free-streaming data acquisition system will be used at this experiment, which aggregates the data sent by the self-triggered front-end electronics of all CBM detector subsystems and sends them to an online compute farm for data reconstruction and selection in real time. To test and optimize the operation of the full CBM experiment at heavy ions high beam rates, the mini CBM (mCBM) was constructed and installed on SIS18 at GSI. The mCBM includes subdetectors of all CBM detector systems including one module of the Projectile Spectator Detector (mPSD) The mPSD FEE, system of readout and digitizing analog signals, as well as a time synchronization technique used by mPSD will be discussed. Preliminary mPSD response results at mCBM heavy ion beam tests will be presented.

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