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Silicon Pixel Detector for Vertex Tracker in RHIC-PHENIX experiment ATSUSHI TAKETANI, RIKEN Nishina Center, PHENIX COLLABORATION — The PHENIX experiment at the RHIC will be upgraded with a Silicon Vertex Tracker (VTX) in 2010 to enhance the physics capability in both of spin and heavy ion program. The VTX will be placed near the collision point with large geometrical acceptance ($\phi \sim 2\pi$, $|\eta| > 1.2$). It is able to identify the heavy quark productions by measuring the displaced vertex and identify the Jet production by measuring momentum of charged tracks. The VTX is required fine spatial resolutions with low material budget and high speed readout up to 20 KHz trigger rate. The VTX is consisted from 2 inner pixel layers and 2 outer stripixel layers. The pixel detectors are 30 of ladder modules and their readout electronics. The ladder module is made from 4 pixel sensors modules (pixel size $50 \times 425 \mu\text{m}^2$), carbon fiber support structure including cooling pipe, and fin pitch low radiation length readout bus. We archived 1.26% X/X_0 in total to minimize the multiple scattering. The spatial resolution of the prototype ladders was measured as 14 μm in ϕ direction and 150 μm in Z by using 120GeV proton beam. The production of pixel ladders and readout electronics has been started in spring of 2009. We will report their performance and status of the production.

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