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**Sensors, High Density Interconnect and Readout Chips for the Forward Vertex Detector at PHENIX** ALEXANDER BARRON, University of New Mexico, PHENIX COLLABORATION — The PHENIX experiment at RHIC at Brookhaven National Laboratory has been providing high quality physics data for over 10 years. The current PHENIX physics program will be significantly enhanced by addition of the Forward Silicon Vertex upgrade detector (FVTX) in the acceptance of existing muon arm detectors. The proposed tracker is planned to be put into operation in 2012. Each arm of the FVTX detector consist of 4 discs of silicon strip sensors combined with FPHX readout chips, designed at FNAL. The full detector consists of over 1 million active mini-strip channels on sensors based on a custom design by the FVTX Collaboration and built by Hamamatsu. The sensors are bonded to a High-Density-Interconnect (HDI) card which provides the platform for the sensors, readout chips, and connection to the rest of the readout electronics. We describe in detail the geometry and performance metrics of the sensors, HDI and FPHX chips, including tests performed on each to verify production quality.

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