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Design and Production of the LHCb Silicon Tracker

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The LHCb Silicon Tracker covers a sensitive surface of about 14 m 2 with silicon micro-strip detectors. It uses up to 132 cm long detector modules with readout strips of up to 38 cm in length and up to 57 cm long Kapton interconnects in between sensors and readout chips. This results in large load capacitances for the front-end amplifiers and an extensive R&D programme was carried out to demonstrate that good S/N performance can be achieved despite the fast signal shaping times required for operation at the LHC. The production of detector modules is coming close to its completion. Special emphasis has been put on module quality assurance at all stages of the production. Various tests are performed after each production step and each module goes through several burn-in cycles lasting several days each. In my contribution, I will briefly describe the detector design, give a short overview of the main results from R&D and then concentrate on our experience from module production and quality assurance.

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