

## Design and Production of the LHCb Silicon Tracker

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With a sensitive surface of about  $14 \text{ m}^2$ , the LHCb Silicon Tracker is one of the largest silicon detectors currently under construction. In order to minimize the number of readout channels, long readout sectors with effective strip lengths of up to 38 cm are utilized. This results in large load capacitances at the input of the front-end readout amplifiers. One of the biggest challenges in the design of the detector therefore was to ensure sufficiently high signal-to-noise ratios in view of the fast shaping times required to avoid overlapping events at the LHC bunch crossing rate of 40 MHz. Another design goal was to minimize the amount of material inside the acceptance of the experiment. This resulted in a design that utilizes detector modules of up to 132 cm in length, with readout electronics at either end of the ladder. Electronically, each module is split into several readout sectors, the inner readout sectors being connected to their front-end readout chips via long Kapton interconnect cables. In my talk, I will give a brief summary of the R&D programme that was carried out in order to validate the detector design and summarize our experience from the module production and quality assurance programme, which are going to be completed in autumn.