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Beam position monitor for the SPring-8 synchrotron

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Beam position monitors (BPMs), which are placed in the SPring-8 booster synchrotron, are designed to measure a closed orbit distortion (COD). The BPMs are located at the upstream position of 80-quadrupole magnets. Each BPM consists of four button-type electrodes which are mounted on the wall of the vacuum chamber. The diameter of all the electrodes is 18 mm. Output signals from the electrodes of 20 BPMs are selected by PIN-diode switches, and the amplitudes of these signals are measured by the same detection system. Four detection systems are used at the same time for 80 BPMs, and the measurement time of this system is less than 30 ms.