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Development of 4GSR BPM Electronics for the Korean 4th Generation Storage Ring

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New BPM electronics have been developed for installation in the storage ring of the 4th Generation Synchrotron Radiation Facility in Ochang, South Korea. Based on the first prototype, two different platforms were utilized for the development of the second prototype. The first version employs an RFSoC-based design, which acquires broadband signals up to 2 GHz using a high-performance 2.5 GS/s ADC, enabling real-time turn-by-turn data measurement. The second version is implemented using a commercial uTCA board along with a newly developed RTM card designed specifically for BPM electronics. This uTCA-based system utilizes a 500 MHz center frequency with a ±10 MHz narrowband AFE RTM card and a 250 MS/s ADC to perform turn-by-turn data acquisition. This paper presents detailed hardware specifications and configurations and provides an in-depth analysis of beam test results conducted at PLS-II.

Footnotes

Funding Agency

I have read and accept the Conference Policies

Yes

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