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Performance of the PAL-designed all-in-one processor for PSIC or XBPM in Pohang Light Source-II

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Real-time monitoring of the beam position during whole measurement at synchrotron radiation facility is extremely important, since it is essential to maintain the stability of the X-ray beam on the sample point. When a very fine collimator is used before sample, the stabilization of the beam position in front of the collimator, should result in stabilizing the incident beam. Thus, there are several kind of the beam position feedback systems with the x-ray position monitoring system near sample position.

We developed the 4-channel processor which is adaptable to PSIC(Position Sensitive Ion Chamber) or XBPM (X-ray Beam Position Monitor). This all-in-one processor includes all electric devices (high voltage supply, current amplifier, analog-to-digital converter, etc) for X-ray position measurement. And, it's available for use with local mode and remote mode.

The results of 2 m spatial resolution with PSIC is possible to apply as a XBPM for mostab FB (monochromator stabilizer feedback) system. Measured results and several calculated parameters (linear range, spatial resolution, positional uncertainty, etc) will be displayed. Whole data were collected and analyzed at the beamline of Photon Test Facility in PLS-II.

Keywords

XBPM, all-in-one processor

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