

MicroTCA.4-based Beam Charge Measurement for XFEL and FLASH/FLASH2

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A Beam Charge Measurement system with a resolution of 0.2 pC RMS was developed for XFEL and FLASH/FLASH2. In addition, the system provides beam loss detection from differential measurements over optical fibers, based on the “bunchpattern” information provided by the Timing System.

This presentation will show the implementation in MicroTCA.4 with a Struck SIS8300L2D AMC, a special RTM and an analogue frontend. The connection to the Timing System will be discussed as well as the interface to the Machine Protection System (MPS). The differential beam loss detection will be explained, and our experiences from commissioning and first operation will be reported.

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