Contribution ID: **21** Type: **not specified**

Low-latency 1D image detector realized as an AMC module

Thursday 12 December 2013 12:11 (13 minutes)

XFEL and FLASH machines use magnetic chicanes for compressing the electron bunches and hence obtaining higher beam peak current.
To monitor the operation of the bunch compressors the spatial charge profile should be evaluated. As the bunch is traveling through the beam pipe with relativistic speed it is a very hard task to measure its parameters. One of the methods to do so is by setting an electro-optic crystal near the beam trajectory and analysing femtosecond laser pulses passing thorough the crystal.
The presentation will cover design, debugging and evaluation
of low-latency 1D image acquisition system realized in the MicroTCA. The talk will provide information on the experimental setup, dedicated readout circuits, die to PCB bonding and other interesting design challenges.

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Session Classification: Applications in research facilities

Track Classification: Applications in research facilities