

## Overview on the LLRF and MicroTCA developments at DESY

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In 2010, the decision was taken to base the European XFEL LLRF controls hardware on the new emerging crate standard MTCA.4. First proof-of-principle experiments to operate a cryogenic accelerator module equipped with 8 cavities have been successfully carried out in autumn 2011. The final board design choices, several improvements and architectural adaptations have since been made allowing now for European XFEL LLRF series production. Meanwhile, several accelerator and test facilities such as the free electron laser FLASH, the Cryo Module Test Bench (CMTB), the Accelerator Module Test Facility (AMTF) and the normal conducting 3.0 GHz Relativistic Electron Gun for Atomic Exploration (REGAE) have been equipped and operated based on MTCA.4. In addition, DESY has received funding from the Helmholtz Association through the Validation Fund .MTCA.4 for Industry. to further develop the MTCA.4 crate standard and to foster its usage in scientific applications and to industrial markets.

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