

Test-Stand for High-Performance FPGA Computing Module

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The European-XFEL project requires a powerful computing module for the Low-Level RF system. The processing power will be provided by CM045 module delivered by Vadatech –a fruit of successful commercialization of DAMC_TCK7 module developed for DESY by DMCS. About 100 boards will be ordered and will have to be carefully evaluated before installation in the accelerator tunnel. Manual testing of every important component on each board would be enormous task. In order to boost the effectivity and reduce risk of missing any important problem a semi-automated Test-Stand was proposed.

The test-stand suite is composed of two FPGA firmwares and a set of Python scripts. The test suite verifies operation of the power supplies, FPGA, CPLD, MMC, all the memories and fast data links. Finally a PDF report is generated for each tested module. The presentation will provide more details on how the solution is implemented and how it parts are interfacing together.

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