

Low Level RF Workshop 2022



9-13 Oct 2022, Brugg-Windisch, Switzerland



Contribution ID: 45

Type: **Oral**

FLASH2020+ RF Reference Generation System Upgrade Status

Tuesday 11 October 2022 08:40 (20 minutes)

FLASH was the first FEL in the world to provide ultrashort pulses of radiation in extreme ultraviolet and soft X-ray range, first launched in 2005. The FLASH2020+ plan is to upgrade the existing FEL lines, by implementing tunable undulators and extending the maximum electron beam energy to 1.35 GeV. The upgrade plan was also a perfect opportunity to completely rebuild the RF reference generation system and its infrastructure, which were done within the cooperation of ISE WUT and DESY. FLASH RF reference area was rearranged and a new set of RF cabling was installed and documented. Based on ISE team's experience in designing RF reference and distribution modules for FLASH, European-XFEL, and ESS new, custom-made RF modules were designed, manufactured, tested, and installed in FLASH. Not only do they provide better performance than the previous modules, but also are designed in a far more compact shape that maintains excellent serviceability and robustness. This contribution presents the RF reference generation channels upgrade process, describes the new modules, like the new Master Oscillator, Distribution Module, and Frequency Conversion Modules, and summarizes the status.

Author: URBANSKI, Maciej (Warsaw University of Technology)

Co-authors: GASOWSKI, Bartosz (Warsaw University of Technology); ANDZEJ, Serlat (Warsaw University of Technology); KOLA, Bartłomiej (Warsaw University of Technology); JATCZAK, Pawel (Warsaw University of Technology); OWCZAREK, Tomasz (Warsaw University of Technology); CZUBA, Krzysztof (Warsaw University of Technology); BRANLARD, Julien (Deutsches Elektronen Synchrotron); PRYSCHIELSKI, Heinrich (Deutsches Elektronen Synchrotron); SCHULZ, Katharina (Deutsches Elektronen Synchrotron); KUEHN, Daniel (Deutsches Elektronen Synchrotron); LUDWIG, Frank (Deutsches Elektronen Synchrotron)

Presenter: URBANSKI, Maciej (Warsaw University of Technology)

Session Classification: Timing and Phase Reference

Track Classification: Low Level RF Workshop 2022