

Status and commissioning results of the CERN SPS MicroTCA Low Level RF

Tuesday 5 December 2023 16:30 (15 minutes)

The CERN Super Proton Synchrotron (SPS) Low Level RF system has been entirely renewed using the MicroTCA platform. It is in operation since 2021, to provide beams for the Large Hadron Collider (LHC) and experimental areas. The cavity controllers and beam control are implemented mostly using commercially available components, while a White Rabbit synchronous clock and LO generator was designed in-house. A modular approach based on a MPSoC FMC carrier enables the utilization of 5 Gsps and 125 Msps ADCs for the various beam pick-ups of the beam control. Most of the MicroTCA.4 features are leveraged for controls, data acquisition (PCIe), point-to-point 10 Gbps links and clock distribution. In this presentation we will go through the system architecture and hardware, the commissioning results and the overall experience with the new platform.

Primary author: SPIERER, Arthur (CERN)

Co-authors: PHILIPPE, Baudrenghien (CERN); HAGMANN, Gregoire (CERN)

Presenter: SPIERER, Arthur (CERN)

Session Classification: Session II