

Use of MTCA.4 and White Rabbit in the CERN SPS Low Level RF system

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The Super Proton Synchrotron (SPS) Low-level RF (LLRF) system at CERN was completely revamped in 2020. In the old system, the digital signal processing was clocked by a submultiple of the RF. The new system uses a fixed-frequency clock derived from White Rabbit. This triggered the development of an eRTM module for generating very precise clock signals to be fed to the RF backplane in MTCA.4 crates. The eRTM14/15 sandwich of modules implements a WR node delivering clock signals with a jitter below 100 fs. This presentation will explain the general architecture of this new LLRF system, highlighting the role of the eRTM14/15 module and the LLRF backplane.

Summary

Primary author: WLOSTOWSKI, Tomasz

Presenter: WLOSTOWSKI, Tomasz

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