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Development of an RF system for Slow Extraction signal generation and measurement

2020 MedAustron and Instrumentation Technologies started to develop a new RF instrument, capable of handling all RF use-cases in the injector or the synchrotron at MedAustron. This development is now mostly finished and the device is ready for commissioning. The system can be used as digitizer or beam diagnostic device, but it can also generate arbitrary RF signals. Combining RF readout and generation, it can be used to regulate cavity amplitudes and phases, and additionally beam phase and radial position regulation is possible for synchrotron applications. On the beam diagnostic side, online beam energy measurements (using time of flight) and beam position measurements are available. With offline data processing, Schottky measurements and longitudinal phase space reconstructions are possible. The presentation will introduce the instrument and some basic design principles and will show some examples how it can be used or is already used at MedAustron.

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