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## High-speed ADC and high-speed DAC MicroTCA.4 AMC-RTM pair for a multiple of diagnostics and feedback implementations

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We present the MicroTCA.4 electronics, an AMC-RTM pair, for direct sampling of wideband signals with high-speed ADCs, versatile digital signal processing with a SoC FPGA and driving of wideband signals with high-speed DACs. Its core component is the Zynq UltraScale+ RFSoc Gen 3. The RFSoc IC was mainly designed for the telecommunication and RADAR systems, however, it is also planned for man-ifold scientific experiments, which are shortly introduced in this paper. Not only a multiple of diagnostics can be implemented, but also wideband feedbacks due to driving capabilities of DACs.

A hardware architecture is presented, which provides in-formation how the modules can be set up and configured for a particular application. The performance and functionali-ties are discussed with special focus on system noise, which is a great importance for high-precision scientific research.

### Footnotes

### Funding Agency

### I have read and accept the Privacy Policy Statement

Yes

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