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DESY DAMC-DS5014DR

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This work will show the recent developments of the DESY DAMC-DS5014DR MicroTCA card. The core of the DAMC-DS5014DR is the Xilinx Zynq UltraScale RFSoc Gen. 3. It consists of eight 14-bit, 5-GSPS RF-ADCs, eight 14-bit, 10-GSPS RF-DACs, programmable logic (PL) and processing system (PS). The RF-ADCs convert the wideband analog pulses directly to the digital. DAMC-DS5014DR has a PCIe Gen. 3 x4 interface to the feedback server over the AMC backplane and a 100 GbE interface to the tools server over the front panel. Three separate 16-GB, 64-bit DDR4 memory banks, two dedicated to the PL and one to the PS, are especially useful for the processing of fast data streams. The RF-DACs are connected differentially and single-ended over Zone 3 to the back-ends. The RF-DACs of the RFSoc have built-in variable output power (VOP), which regulates the output power of the differential signals from -18.5 dBm to 6 dBm. In the Zone 3 interface, four single-ended RF-DACs are connected to the Radial connector, and four RF-DACs' differential outputs are connected to the ERNI connector.

Summary

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