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The Top Products of 2020: Part 2

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RFSoc PCIe Board Serves Broad Array of Wireless Applications

Bringing RFSoc performance to PC platforms with a complete system on a board, [Pentek's](#) Quartz 7050 is an 8-channel DAC and ADC on a PCIe double-wide board. The model 7050 is based on the Xilinx Zynq UltraScale+ RFSoc, a single-chip, adaptable radio platform, making it very popular for 5G and LTE wireless, SIGINT and COMINT, EW countermeasures, radar-on-a-chip, test and measurement, satellite communications, and LiDAR applications.

The Model 7050 design places the RFSoc as the cornerstone of the architecture. All control and data paths are accessible by the RFSoc's programmable logic and processing system. A full suite of Pentek-developed IP and software functions utilize this architecture to provide data capture, timing, and interface solutions for many of the most common application requirements.

Pentek's Quartz architecture embodies a streamlined approach to FPGA boards, simplifying the design to reduce power and cost, while still providing some of the highest performance FPGA resources available today. Designed to work with Pentek's Navigator Design Suite tools, the combination of Quartz and Navigator offers users an efficient path to developing and deploying software and FPGA IP for data and signal processing.

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RFSoc Board Aligns with SOSA Reference Architecture

With the launch of its Quartz model 5550 RFSoc board, [Pentek](#) stakes out a leadership position in the defense/aerospace sector's adoption of the Sensor Open System Architecture (SOSA) Technical Standard and the reference architecture it defines. To that end, the board implements connector technology that enables a major goal of the SOSA reference architecture—backplane-only I/O. It incorporates the ANSIVITA 67.3D VPX backplane interconnect standard for both coaxial RF and optical I/O. In addition, the Model 5550 includes a 40-GbE interface and a shelf-management subsystem that are also required by the SOSA reference architecture.

The 3U OpenVPX board, equipped with PCI Express Gen 3 capabilities, comprises an eight-channel analog-to-digital converter (ADC) and digital-to-analog converter (DAC) and is based on the Xilinx Zynq UltraScale+ RFSoc FPGA. It's aimed squarely at applications in communications, electro-optics, electronic warfare, and radar and signals intelligence.

Pentek's modular approach to hardware and software enables quick adaptation to new and changing customer requirements. The Model 5550 uses the Model 6001 QuartzXM eXpress module containing the RFSoc FPGA and all needed support circuitry implemented on a carrier module designed specifically to align with the technical standard for the SOSA reference architecture. This allows for easy upgrades to third-generation RFSoc modules when available.

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