

Press Release:

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APZU Series User-Configurable Zynq® UltraScale+™ MPSoC I/O Modules

- **Xilinx® Zynq UltraScale+ MPSoC**
- **ARM Cortex™ A53 & R5 CPUs**
- **Programmable logic**
- **PCIe Bus Interface**

APZU modules provide a programmable Xilinx Zynq UltraScale+ multiprocessor system on a chip (MPSoC). This MPSoC combines a feature-rich ARM-based processing system and programmable logic in a single device. Two dual-core ARM Cortex CPUs (A53 application processor and R5 real-time processor) deliver high-performance computation capability. Additional resources include on-chip memory, external memory interfaces, and a rich set of peripheral connectivity interfaces. The integrated ASIC-class programmable logic is ideal for compute-intensive tasks and offloading critical applications.

The real value of the Zynq UltraScale+ MPSoC architecture lies in the tight integration of its programmable logic with the processing system. Its high throughput interface eliminates bottlenecks that plague two-chip ASSP-FPGA solutions and allows designers to easily extend the processing system capabilities. Now developers can build custom designs by adding peripherals in the programmable logic and increase overall system performance by partitioning hardware and software functions with custom accelerators.

Designed for COTS applications these FPGA-based digital I/O modules deliver user-customizable I/O in a high-density and very rugged form factor. Typical applications involve adaptive filtering, sensor fusion, motor control, and image processing.

Acromag's Engineering Design Kit (EDK) provides an FPGA generated firmware example design that provides host access to the hardware digital I/O on the APZU module. The example is implemented using the Xilinx Vivado® development environment and offers a starting point from which customers can develop their customized applications.

Performance Specifications

Multiprocessor SoC

MPSoC device: Xilinx Zynq XCZU3CG-2SBVA484I.
Application processor: Dual-core ARM Cortex-A53, 1.3GHz. Single/double precision floating point unit.
Real-time processor: Dual-core ARM Cortex-R5, 533MHz. Single/double precision floating point unit.
NEON Advanced SIMD media-processing engine.
Programmable logic resources: 154,350 logic cells; 70,560 LUTs; 360 DSP slices.
Configuration: Primary boot from SD card or NOR flash alternate.

