Enclustra Unveils Ultra-compact Pluto Series: Bringing the Power of FPGA to Portable Solutions

The coin-sized system-on-module (SoM) combines embedded intelligence and portability, accelerating the development of compact, low-power applications in industry, healthcare, and security.

Highlights:

- The Pluto SoM series is a complete, powerful embedded processing system designed to reduce the cost and effort involved in developing portable applications that require the unique capabilities of field-programmable gate arrays (FPGAs).
- By delivering embedded intelligence right on the end device, the Pluto SoM performs real-time image and data processing independently of the cloud, increasing data security and freeing up valuable wireless bandwidth.
- The Pluto series will debut featuring AMD Zynq™ UltraScale+™ MPSoC, with more variants in the pipeline.

Germany April 10, 2024, at Embedded World 2024 in Nuremberg, Germany, Enclustra unveiled the Pluto system-on-module (SoM) series. The coin-sized SoM tackles the size, weight, and power constraints holding FPGA technology back from widespread integration into portable end devices. With artificial intelligence and data processing increasingly migrating from the cloud to the end devices, the ultra-compact Pluto SoM series will facilitate the development of computationally demanding portable applications.

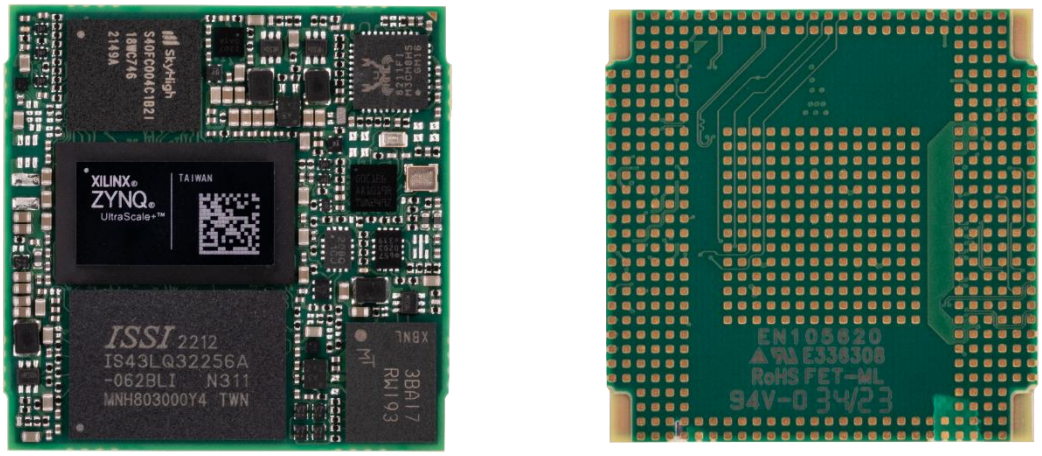
"Across industries, we are seeing demand rise for the computational performance, security, flexibility, and scalability offered by FPGA technology," says Gaël Paul, Vice President of Innovation at Enclustra. "The Pluto system-on-module series makes it easier than ever for device makers to leverage the benefits of FPGAs in compact, portable solutions, enabling limitless possibilities in remote monitoring, sensing, and industrial control applications."

A complete and powerful embedded processing system

The Pluto SoM series delivers a complete and powerful embedded processing system in an ultra-compact 30-by-30-by-1 millimeter form factor. The Pluto XZU20 SoM is the first in the series: Featuring an AMD Zynq™ UltraScale+™ MPSoC, it combines 16nm FinFET+ FPGA fabric with an ARM® quad-core Cortex™-A53 and an ARM® dual-core Cortex™-R5F microprocessor as well as a Mali-400MP2 GPU.

Designed for power-constrained applications, the Pluto series is available with up to 2 GB of low power LPDDR4 SDRAM memory. Gigabit Ethernet and USB3.0 interfaces facilitate its integration into various solutions. Native support for the Linux operating system further streamlines product development.

The Pluto SoM series will be expanded to include variants featuring a Microchip Polarfire® SoC and an Altera Agilex 5® SoC, with more FPGA architectures in the pipeline.



Pluto XZU20 – front and back; Mini form factor: 30 × 30 mm

Portable intelligence where you need it.

The Pluto SoM series lets device makers accelerate data-intensive operations by executing algorithms implemented directly within the FPGA fabric, optimizing performance for specific tasks. Examples include real-time video processing for medical smart glasses or connected surveillance systems, zero-latency sensor fusion for data sensing and autonomous navigation, and AI inference for portable intelligent applications.

The SoM's miniature form factor, low power requirements, and capable multiprocessor make it ideal for many demanding use cases in remote monitoring, communication, and control; sensing applications, such as environmental monitoring and data collection; and high-performance industrial control.

Eliminating data traffic from the device to the cloud for processing safeguards sensitive data while protecting wireless bandwidth.

Available Today

The Pluto SoM series is available today through an Early Access Program that lets end device manufacturers gain first experiences with its unique features, while engineering samples offer easy access to the most common interfaces. A dedicated thermal solution, including a dedicated heatsink, rounds off the offering.

To learn more about the Pluto SoM series, head over to the Pluto XZU20 product page and reach out to discuss your project via our Design Services enquiry form.

About Enclustra GmbH

Enclustra is an innovative, dynamic, and growing company for FPGA design with headquarters in Zurich, Switzerland, with subsidiaries in Germany, France, USA, and China.

As a leader in FPGA design and development, Enclustra offers a product portfolio of FPGA-based electronic modules and FPGA-optimized IP solutions for industrial customers and R&D organizations. In parallel, Enclustra provides leading engineering services in FPGA system design, covering the entire spectrum of FPGA-based system development: from high-speed hardware or HDL firmware to embedded software, from system design, specification, and implementation to prototyping.

Leveraging our expertise in cutting-edge FPGA technology and diverse application knowledge, Enclustra delivers high-performance solutions across various industries, minimizing development effort and accelerating your time-to-market.

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