Press Release

Zurich, October 22 2022

Enclustra Mercury XU5: the cost-effective Xilinx Zynq UltraScale+ SoC module

The [Mercury XU5](#) SoC module from [Enclustra](#) is an extremely powerful and cost-effective all-rounder. Based on the Xilinx Zynq UltraScale+ MPSoC, it features 6 ARM cores, a Mali 400MP2 GPU (EG/EV variants), up to 10 GByte of extremely fast DDR4 SDRAM, numerous standard interfaces, 178 user I/Os and up to 256,000 LUT4 equivalents. Thanks to two independent memory channels – one on the PS and one on the PL – it achieves memory bandwidths of up to 24 GByte/sec. The module, with dimensions of just 56 × 54 mm, has 16 GByte eMMC flash memory as well as various standard interfaces, such as Gigabit Ethernet, USB 3.0, a display port, SATA and SGMII. Both the processing system and the FPGA matrix boast four PCIe Gen2/3 connections.

Shorten your time-to-market

A [System-on-Module](#) (SOM) like the Mercury XU5 helps to reduce time-to-market and development risks. SOMs offer many advantages over chip-down designs. The high production quantity of off-the-shelf FPGA or SoC modules reduce their cost and at the same time provides a proven and reliable solution. Since different pin-compatible modules are available in the same form factor, a product can be easily equipped with a more powerful module if needed. Thanks to the high functional density of the FPGA modules, the complexity of the base board is also reduced, making it faster and less expensive to develop. In combination with the Mercury+ ST1 or Mercury+ PE1 base boards, the Mercury XU5 constitutes a powerful development and prototyping platform that helps to reduce time-to-market even further.

[Enclustra](#) also offers a comprehensive ecosystem, offering all of the hardware, software ([Linux Board Support Package/BSP](#)) and support materials required. Detailed documentation and reference designs make it

easy to get started, in addition to the user manual, user schema, a 3D-model, PCB footprint and differential I/O length tables.
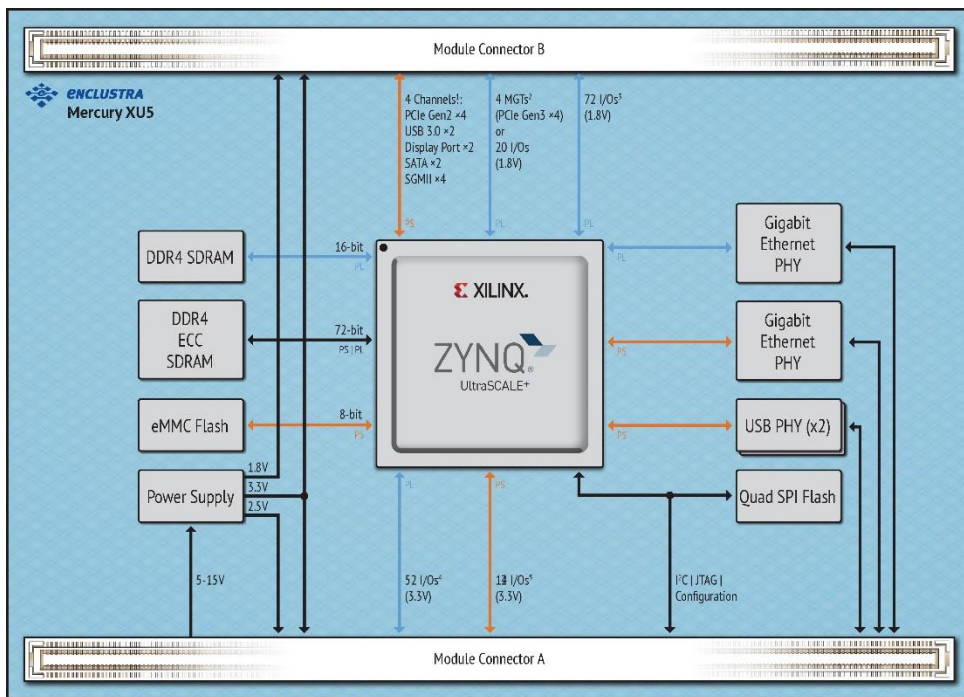
((Pictures))
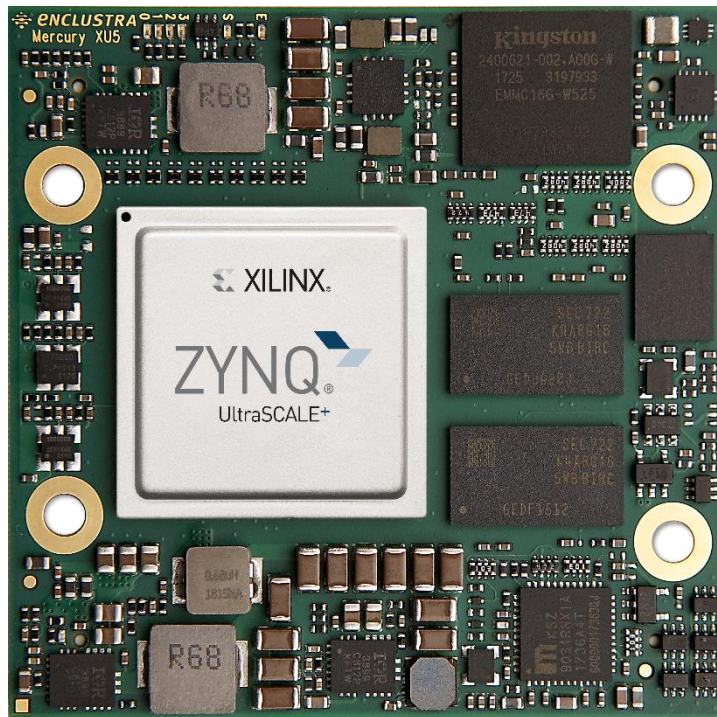
((Filename: Enclustra_Mercury_XU5_front_withXilinxLogo.jpg:))

((Caption))

Enclustra's Mercury XU5 module is based on the Xilinx Zynq UltraScale+ MPSoC and has a memory bandwidth of up to 24 GByte/sec. (Picture: Enclustra GmbH)

Module Connector B

enclustra
Mercury XU5

4 Channels!:
PCIe Gen2 ×4
USB 3.0 ×2
Display Port ×2
SATA ×2
SGMII ×4

4 MGTs²
(PCIe Gen3 ×4)
or
20 I/Os
(1.8V)

72 I/Os⁵
(1.8V)

Gigabit
Ethernet
PHY

DDR4 SDRAM

16-bit

XILINX.

ZYNQ
UltraSCALE+

Gigabit
Ethernet
PHY

DDR4
ECC
SDRAM

72-bit
PS | PL

eMMC Flash

8-bit

USB PHY (x2)

Power Supply

1.8V
3.3V
2.5V

Quad SPI Flash

5-15V

52 I/Os⁴
(3.3V)

12 I/Os⁵
(3.3V)

I²C | JTAG |
Configuration

Module Connector A

G1 Variants: 1.) 0 Channels, 2.) 4 MGTs only, 3.) 92 I/Os, 4.) 54 I/Os, 5.) 12 I/Os

((Filename: mercury_xu5_block_diagram_catalogue.jpg/.pdf))

((Caption))

*The Mercury XU5 block diagram is showing all components and connections.
(Picture: Enclustra GmbH)*

About Enclustra GmbH

Enclustra is an innovative and successful Swiss FPGA design company. With the FPGA Design Center, Enclustra provides services covering the whole range of FPGA-based system development: From high-speed hardware or HDL firmware through to embedded software, from specification and implementation all the way to prototype and series production.
In the FPGA Solution Center, Enclustra develops and markets highly-integrated FPGA modules and FPGA-optimized IP Solutions.
By specializing in forward-looking FPGA technology, and with broad application knowledge, Enclustra can offer ideal solutions at minimal expense in many areas. More information can be found at:
www.enclustra.com

Reader contact:
Enclustra GmbH
Raeffelstrasse 28
8045 Zurich

Switzerland

Tel. +41 43 343 39 43

www.enclustra.com

info@enclustra.com

Download: *Press kit [ZIP, 5 MByte]*