Press Release

Zurich, 18th July 2018

The Enclustra Mercury+™ AA1 SoC module: universal connectivity

Intel® Arria® 10 module, smaller than a credit card

The Mercury+ AA1 SoC module from FPGA specialists Enclustra is based on the Intel Arria 10. Alongside the integrated dual-core ARM® processor, there are a wealth of I/Os, interfaces and memory that enable the module to fulfil extremely demanding data integrity requirements.

At the heart of the high-end Mercury+ AA1 SoC module from Enclustra is the Intel Arria 10 SoC, which features 20 nm technology and comes with an integrated dual-core ARM processor. Up to 286 user I/Os are available for communication with the outside world, including 12 multi-gigabit transceivers, each offering a data transfer rate of up to 12.5 Gbit/sec. Featuring interfaces for USB 3.0, PCIe Gen3 x8 and Gigabit Ethernet, the connectivity requirements of almost every application can be easily met. The module's up to 4 GByte large DDR4 SDRAM with ECC also allows for immense data throughput with guaranteed integrity.
The module is available in both commercial and industrial temperature ranges, needs just a single 5-15 V supply for operation and has a planned availability of 10 years.

Reference design and Linux at the push of a button
Enclustra offers broad design-in support for their products. With the Mercury+ PE1-300 or Mercury+ PE1-400 baseboards, the Mercury+ AA1 is a powerful development and prototyping platform. Further expansion options are provided by the LPC/HPC FMC connectors on the PE1 base board, which is compatible with a wide range of plug-in cards from various manufacturers - ADCs, DACs, motor control cards and RF links are just a small selection of the possibilities on offer.

Enclustra also offers a comprehensive ecosystem for the AA1, offering all of the hardware, software and support materials required. Detailed documentation and reference designs make it easy to get started, in addition

to the user manual, schema, a 3D-model (STEP), PCB footprint Footprint (Altium®, OrCAD®, PADS®, EAGLE®) and differential I/O length tables.

The Enclustra Build Environment can be used to compile the Enclustra SoC modules with an integrated ARM processor very smoothly. The module and base board are selected by a graphical interface. Afterwards, the Enclustra Build Environment downloads the appropriate Bitstream, Bootloader and the required source code. Finally, U-Boot, Linux and the root file system, which is based on BusyBox, are compiled.

Thanks to the family concept with compatible connectors, different types of modules can be used on the same base board, such as the Intel Cylcone V SoC-based Mercury SA1 or Mercury+ SA2.

The Mercury + AA1 is the first module from Enclustra based on the Intel Arria 10. (Picture: Enclustra GmbH)

About Enclustra GmbH

Enclustra is an innovative and successful Swiss FPGA design company.
With the FPGA Design Center, Enclustra provides a portfolio of services covering the whole range of FPGA-based system development – from high-speed hardware or HDL firmware through to embedded software, and from specification and implementation through to prototype production.
In the FPGA Solution Centre, Enclustra develops and markets highly-integrated FPGA modules and FPGA-optimized IP cores.

By specialising in forward-looking FPGA technology, and with extensive application knowledge, Enclustra can offer ideal solutions at minimal expense in many areas. More information can be found at: www.enclustra.com

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