

EnsembleSeries™ SCFE3820

OpenVPX™ FPGA processing module



- Zynq® UltraScale+™ FPGA processing power
- Processing subsystem in data path for max performance
- OpenVPX™ architecture for easy integration

Mercury's EnsembleSeries™ SCFE3820 is a versatile OpenVPX™ FPGA processing module designed for high performance and agile system integration. Incorporating Zynq® Ultrascale+™ FPGA processing power and an open architecture, this advanced module maximizes performance by locating the processing subsystem directly in the data path. A custom mezzanine site enables increased I/O support for unique applications. With multiple cooling options available, the SCFE3820 is ideal for SWaP-focused applications that require high-performance operation in harsh environments.

Advanced FPGA functionality

Mercury's processing modules are built around our EchoCore® FPGA IP, providing basic infrastructure functionality right out of the box, which enables customers to focus on their specific application needs. The reuse of common IP across FPGAs reduces development time, optimizing time to market.

Mercury's application integration is simplified by providing a standard control plane interface using AXI4-Lite control plane connectivity. Mercury uses a AXI4-Stream interface for the data plane combined with the AXI4-Stream switches for routing data within the FPGA and to external interfaces, such as PCIe. Customers can

select their own tool, such as parameterizable Xilinx IPs, HLS or RTL, to generate signal processing algorithms. The cores are then instantiated into a reserved user block and compiled in the FPGAs.

Specifications

Physical

Single slot 3U OpenVPX form factor
OpenVPX interface architecture with ANSI/VITA 65-2010 (R2013)

Custom Mezzanine Site

Optional single custom mezzanine site

Backplane Interface

VITA 65.0 SLT-PAY-2F1F2U-14.2.1 slot profile

FPGA processor

One Xilinx Zynq® Ultrascale+™ ZU11EG governor

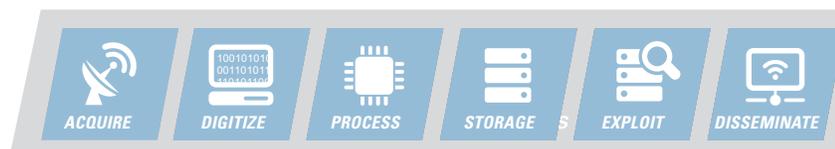
Memory

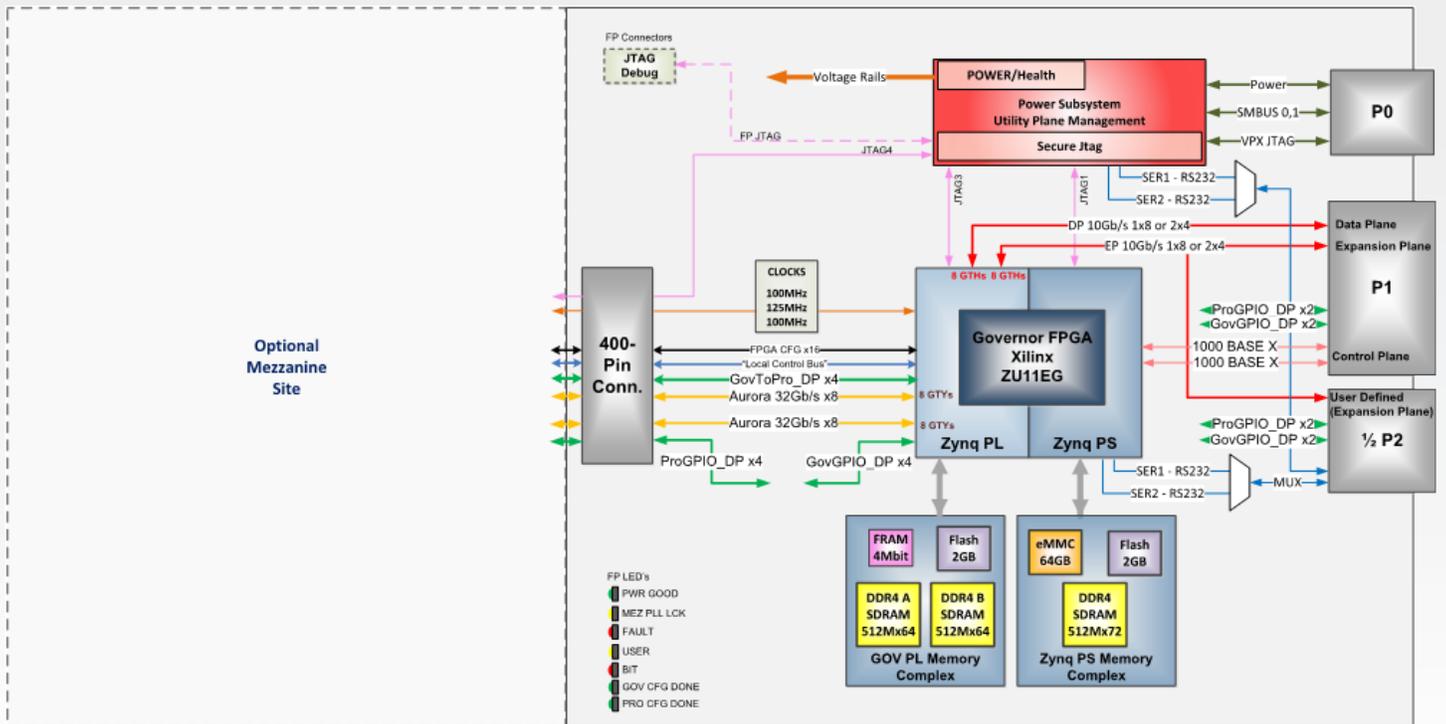
8 GB DDR4 (512M x 16)

Other

Vita 46.11 IPMI controller
Sensor interface to monitor temperature, voltage
Power sequencing
Secure JTAG
Manufactured in an AS9100D facility
Advanced FPGA functionality

Mercury Systems is a leading commercial provider of secure sensor and safety-critical processing subsystems. Optimized for customer and mission success, Mercury's solutions power a wide variety of critical defense and intelligence programs.





SCFE3820 functional block diagram

Application Notes

Mercury delivers a full suite of software libraries to facilitate quick customer algorithm development via an application programming interface (API). The product is preloaded with diagnostic application software to fully exercise capabilities, such as packing and checking of interface links, verifying external memory and



monitoring system health. The SCFE3820 Zynq subsystem is loaded with embedded Linux to allow customization of system management and control. A Linux board support package (BSP) as well as a full set of source code is distributed with the product.



Need more help? Need a variant of this product?

Contact Mercury's Mixed Signal Engineering team at: digital.rf@mercy.com or visit www.mrcy.com/mixed-signal-processing for a detailed listing of OpenVPX products.

Mercury Systems – Innovation That Matters®

Mercury Systems is the leader in making trusted, secure mission-critical technologies profoundly more accessible to the aerospace and defense industries. Optimized for customer and mission success, our innovative solutions power more than 300 critical aerospace and defense programs. Headquartered in Andover, Mass., and with manufacturing and design facilities around the world, Mercury specializes in engineering, adapting and manufacturing new solutions purpose-built to meet the industry's current and emerging high-tech needs. Our employees are committed to Innovation that Matters®. To learn more, visit mrcy.com, or follow us on Twitter.

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