

SIDEWINDER-100

PCIe NVMe Storage Controller



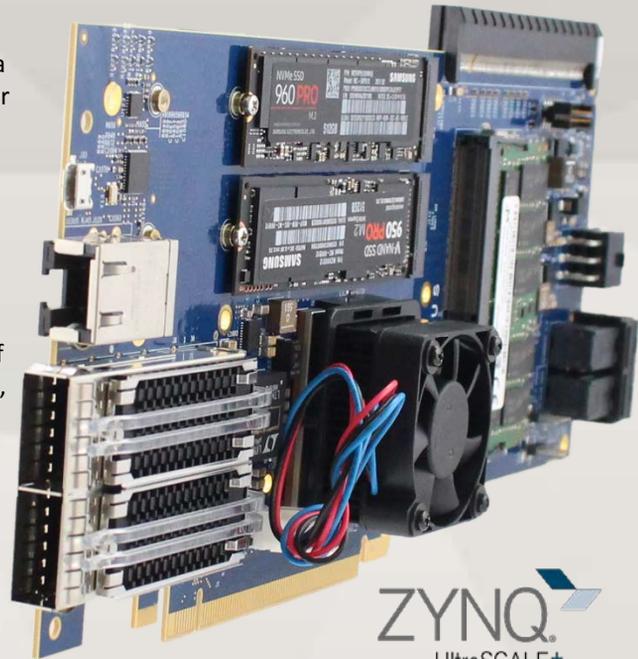
Simply Faster.

Fidus created Sidewinder to accelerate storage applications using a Zynq® UltraScale+™ MPSoC. The platform makes use of NVMe Over Fabrics to eliminate the latency associated with SCSI and SAS protocol translations, resulting in significant reductions in transaction times and thus enabling impressive gains in decision making and response times.

Sidewinder was designed for storage acceleration, however, it has shown itself to be valuable in many other applications as well. One could consider Sidewinder a powerful platform for development of anything that requires processing power, FPGA-based acceleration, and benefits from large amounts of storage.

Fidus is working closely with multiple vendors to deliver tailored solutions to customers. In addition, if you require any custom development, Fidus is ready and willing to discuss your needs.

For all of the above, we say that Sidewinder is- **Simply Faster.**



Highlights.

- A huge Xilinx® Zynq® US+ ZU19EG All Programmable™ MPSoC
- A lightning fast PCIe Gen4 x8/Gen3 x16 Host interface
- 200Gbps network access via dual QSFP cages
- Two (2) M.2 interfaces to support onboard SSDs
- A pair of 8643 connectors enabling access to large off board NVMe SSDs
- Onboard DDR4, two 16GB SO-DIMMs, 72-bit with ECC @ 2400MT/s*
- A PCIe x8 Gen3/4 Expansion Interface



Ecosystem.



Providing world class chips and IP, Xilinx is second to none! Xilinx enables Sidewinder with NVMeoF (NVMe Over Fabrics, NVMF) IP.



Missing Link Electronics is an incredible provider of IP systems and solutions for accelerating data center workloads. MLE provides the first Petalinux port to Sidewinder.

Applications.

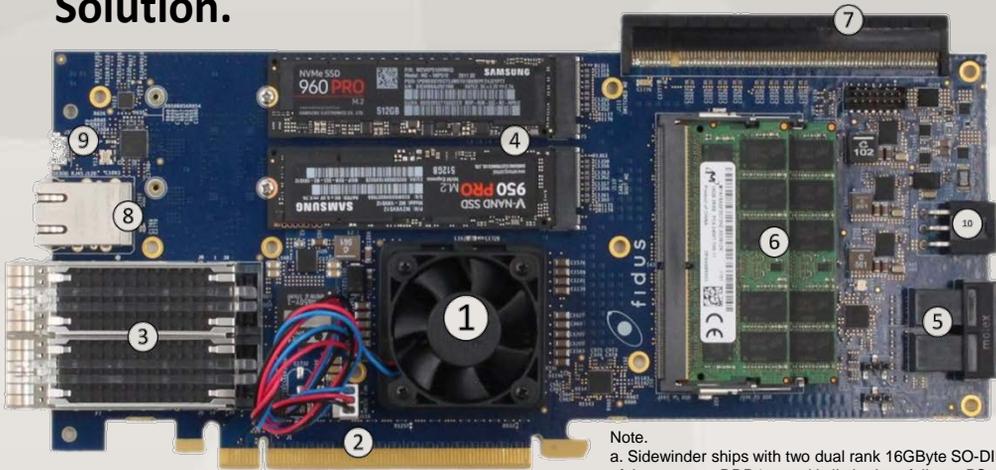
- Cluster It.** Make things super-fast. Implement a bunch of Sidewinders as one big cluster, create massive storage arrays, leverage parallelism for workload acceleration. It's up to you. You need lots, we'll get you lots.
- NVMeoF, NVMF It.** Leveraging NVMe drive technology and NVMe Over Fabrics IP, Sidewinder can decimate the latency associated with accessing mass storage devices (e.g. SSD)
- Accelerate It.** Whether accelerating financial transactions or data center workload algorithms, Sidewinder's Zynq UltraScale+ can be optimally partitioned to accept, crunch, and return, both data and decisions, faster than ever before.
- Develop It.** Maybe you don't own a data center, and you're not concerned about mass storage; put Sidewinder on a desktop and enjoy all of the benefits of having a Zynq UltraScale+ system at your fingertips.
- Learn It.** Sidewinder is a great tool for universities and colleges to explore with their students. Not only does the Zynq US+ contain all of the converged resources that your kids will be tackling in the future, it also provides a high-bandwidth platform for interfacing to a PC.
- Customize It.** Not exactly what you need? You're in luck! Fidus Systems is ready to customize Sidewinder to meet your needs. We have in-house experts in hardware, FPGA, software, signal integrity, and PCB layout. Let Sidewinder accelerate your workload, and let Fidus accelerate your product design.

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Solution.



1. Zynq US+ ZU19EG
2. PCIe Host Connector Gen3/4
3. 100Gbps QSFP Cages
4. M.2 Connectors
5. 8643 connectors
6. DDR4 (PS 16GB, PL 16GB)
7. PCIe Expansion Connector Gen3/4
8. 10/100/1000BaseT Port
9. Micro USB, dual UART port
10. ATX Power Input

Note.

- a. Sidewinder ships with two dual rank 16GByte SO-DIMM modules. Due to the dual rank architecture of the memory, DDR4 speed is limited, as follows: PS max = 1866MT/s and PL=2133MT/s. Higher throughput can be achieved with single rank SO-DIMMs.
- b. Sidewinder is depicted above with two M.2 drives installed. M.2 drives are not provided with Sidewinder.

Specifications.

Environment

Operating/Storage Temp: 0 to 40°C/-20°C to +45°C
 Airflow: 500LFM minimum
 Humidity: 10% to 90% non-condensing

Power

PCIe slot and ATX power required.
 Less than 75 W at power-up, 148W maximum
 dissipation

Dimensions

PCIe ¾ length add-in card form factor
 254mm x 111.15mm (LxW)

Standards

NVM Express Over Fabrics via ROCEV2/iWARP
 PCIe Gen3/4
 CAPI Compatible
 RoHS Compliant / CE Certified (tbd)

Sales and Support.

For additional information, visit: sidewinder.fidus.com

For questions or requests for quotation, contact: sidewinder@fidus.com

Part Number: 10243-01-SW100-003

Description: Sidewinder-100 PCIe Platform

Package Contents: Sidewinder-100, PCIe add-in card (1)

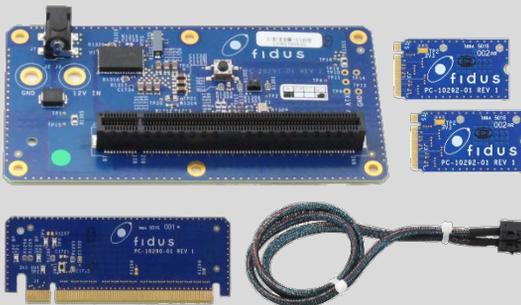
Accessories.

Loop It.

Part Number: 1029x-01-LBTEST-001

Description: Sidewinder-100 Loopback Kit

Contents: PCIe Power an Loopback Adapter (1), PCIe Expansion Port Loopback (1), M.2 Loopback (2), 8643 Loopback Cable (1)



Cluster It.

Fidus Systems Inc. reserves the right to alter, without notice, the specification, design or conditions of supply of any product