**fidus**
innovate•design•deliver

sidewinder

Simply Faster

Fidus created Sidewinder to accelerate networking and storage applications using a Zynq® UltraScale+™ MPSoC. The platform leverages NVMe Over Fabrics technology to eliminate the latency associated with SCSI and SAS protocol translations. This results in significant reductions in transaction times and thus enabling impressive gains latency.

While the Sidewinder was designed for storage acceleration, it can also be leveraged as a powerful platform for developing applications that require heterogenous processing, FPGA-based acceleration, and benefits from high-bandwidth and low-latency storage.

ZYNQ.
UltraSCALE+

Applications

- **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.

- **Cluster It.** Make things super-fast. Implement a number of Sidewinders as one big cluster, create massive storage arrays, leverage parallelism for workload acceleration.

- **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 students will be tackling in the future, it also provides a high-bandwidth platform for interfacing to a PC.

- **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.

- **Customize It.** Not exactly what you need? Fidus Systems can customize Sidewinder to meet your needs. We have in-house experts in hardware, FPGA, software, signal integrity, and PCB layout.
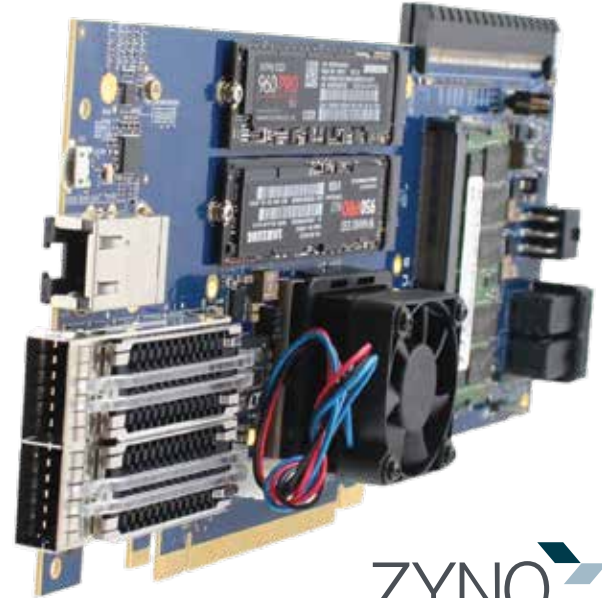
Features

- A powerful 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

XILINX®
ALLIANCE PROGRAM
PREMIER MEMBER

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

Notes

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	Power	Dimensions	Technologies
Operating/Storage Temp: 0 to 40°C/-20°C to +45°C Airflow: 500LFM minimum Humidity: 10% to 90% non-condensing	PCIe slot and ATX power required Less than 75 W at power-up, 148W maximum dissipation	PCIe ¾ length add-in card form factor 254mm x 111.15mm (LxW)	NVM Express Over Fabrics via ROCEV2/iWARP PCIe Gen3/4 CAPI Compatible RoHS Compliant / CE Certified (tbd)

Sales and Support

For additional information, questions or request for quotation visit: sidewinder.fidus.com

Customize your Sidewinder

Speak with our Design Services Group on how to accelerate your custom design: **design@fidus.com**

Part Number: 10243-01-SW100-003

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

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)

About Fidus

Fidus Systems, founded in 2001, specializes in leading-edge electronic product development with offices in Ottawa and Waterloo Ontario, and San Jose, California. Our hardware, software, FPGA and signal integrity teams architect, design and deliver next-generation products for clients in emerging technology markets. We build long-term relationships by consistently exceeding expectations.

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