

::NEW PRODUCT

Nallatech **250-U2** Proxy In-Line Accelerator (PIA)



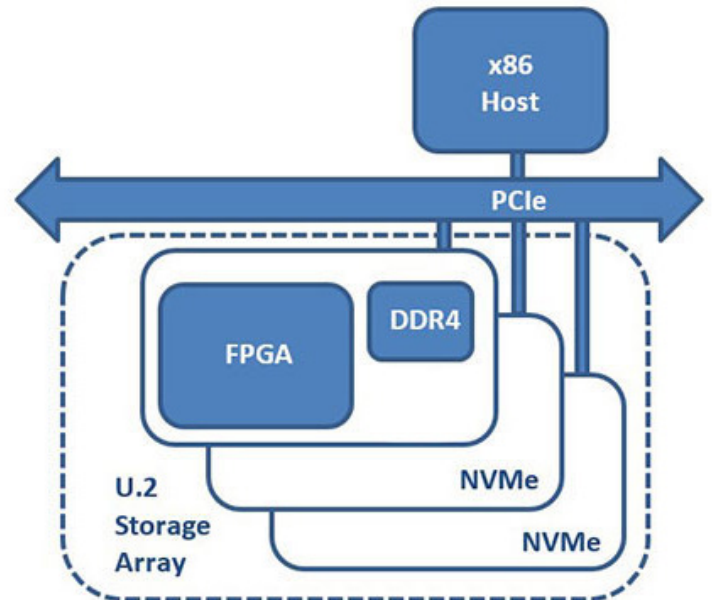
XILINX

The 250-U2 is a fully-programmable near-storage accelerator conforming to the U.2 form factor. It features a Xilinx Kintex UltraScale+ FPGA directly coupled to local DDR4 memory.

This energy-efficient, flexible compute node is intended to be deployed within conventional U.2 NVMe storage arrays (approximately 1:8 ratio) allowing FPGA-accelerated instances of:

- Erasure Coding & Deduplication
- Compression, Encryption & Hashing
- String/Image Search & Database Sort/Join/Filter

The 250-U2 is available as a fully-programmable device for customers preferring to develop and deploy their own application codes.



**Fully Programmable, Inline Storage FPGA Accelerator
with on-card M.2 NVMe SSD**

VIVADO
HLx Editions

» Accelerating High Level Design

- Vivado HLx Editions supply design teams with the tools and methodology needed to leverage C-based design and optimized reuse
- Includes IP sub-system reuse, integration automation and accelerated design closure
- When coupled with the UltraFast™ High-Level Productivity Design Methodology Guide, this unique combination is proven to accelerate productivity
- It enables designers to work at a high level of abstraction while facilitating design reuse

Nallatech
a **molex** company

Proxy In-Line Accelerator (PIA)

Form Factor

- » U.2 compliant 2.5" Drive Form Factor
- » Height: 15mm

Host Interface

- » U.2 Connector
- » Compliant to SFF-8639
- » Actual performance is host computer chipset & operating system dependent

Processing

- » Xilinx Kintex UltraScale+ FFVA1156 package
- » Default configuration: KU15P
- » Core speed grade -2
- » KU11FPGA option, contact Nallatech for details

DDR4 SDRAM Memory

- » One bank of DDR4 SDRAM x 72 bits
- » 8GB per bank (16GB version also available)
- » Transfer Rate: 2400 MT/s

Application Development

- » Vivado Design Suite HLx Editions: HDL and C/C++ with HLS

Electrical

- » Hot swapping tolerant
- » On-card power derived from U.2 supplies
- » Power dissipation is application dependent
- » Typical FPGA power consumption ~20W
- » Card designed to deliver up to 25W power consumption

Quality

- » Manufactured to ISO9001:2008 IPC JSTD-001 -Class III
- » RoHS compliant

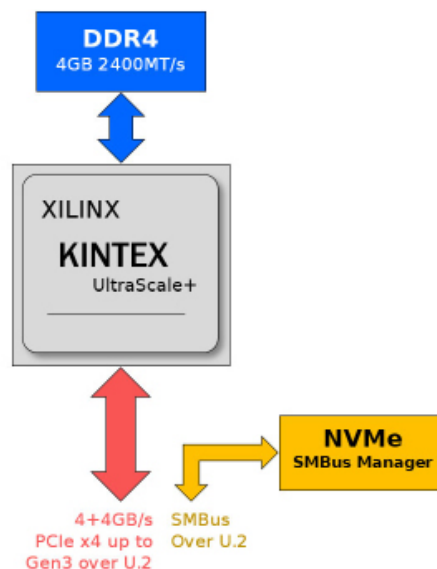
Datacenter Deployment

- » On-board NVMe compliant SMBus controller (Spec. 1.0a)
- » Field flash update via software or SMBus
- » SMBus FPGA flash control: anti-bricking, fallback & multiboot
- » SMBus access to unique board data and temperature sensor

Nallatech's PCIe compliant FPGA boards rely on the host's cooling capabilities to stay within its acceptable operating temperature limits.

The user must make sure that the FPGA application is designed within the power limits documented by Nallatech and that sufficient cooling is provided to make sure the maximum FPGA die temperature is 15C below the maximum operating limit. Nallatech recommends that users perform a thermal characterization of their application in their system to meet these requirements.

Customization: Technical specifications (e.g. FPGA type, size, external memory capacity, single width card solution etc.) can be modified to meet the exact needs of commercial customer applications as off-the-shelf product available to the general market.



250-U2
Block
Diagram

Power Supply Monitoring & Reporting

- » Voltage monitoring
- » Temperature monitoring
- » Fault condition reporting to FPGA

Back Panel Features

- » User LEDs accessible
- » Reset switch to restore factory settings

Development Features (Behind Back Panel)

- » JTAG connector for access to the FPGA, flash & debug tools
- » GPIO connector
- » MicroSD connector

Cooling

- » U.2 drive case optimized for cooling with passive heatsink

Environmental

- » Cooling: Air convection
- » Operating temperature: 5°C to 35°C

Deliverables

- » 250-U2 FPGA card
- » Built-In-Self-Test (BIST)
- » 1-year access to online support lounge
- » 1-year hardware warranty

Application optimization: Sky Blue and Zerif provides consultancy services assisting customers in the porting, optimization and benchmarking of applications executed on Nallatech FPGA accelerators.

Contact



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