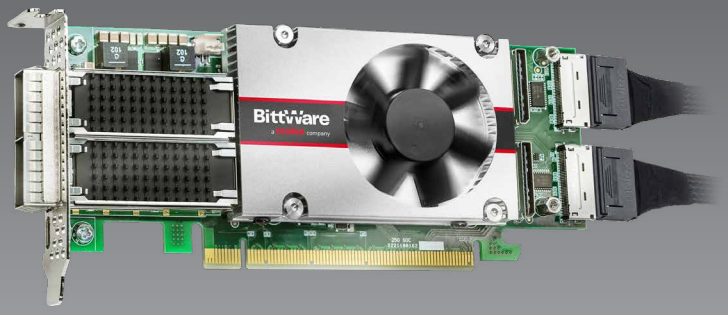
BittWare a molex company

250-SoC

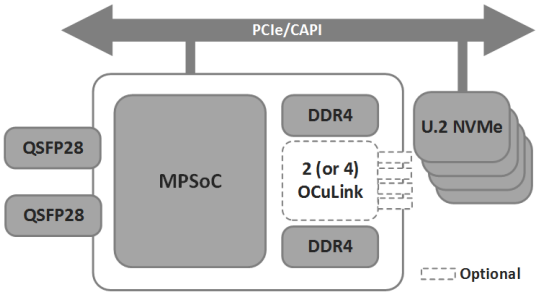
DAA and NVMe-oF



Directly Attached Accelerator & NVMe-over-Fabric

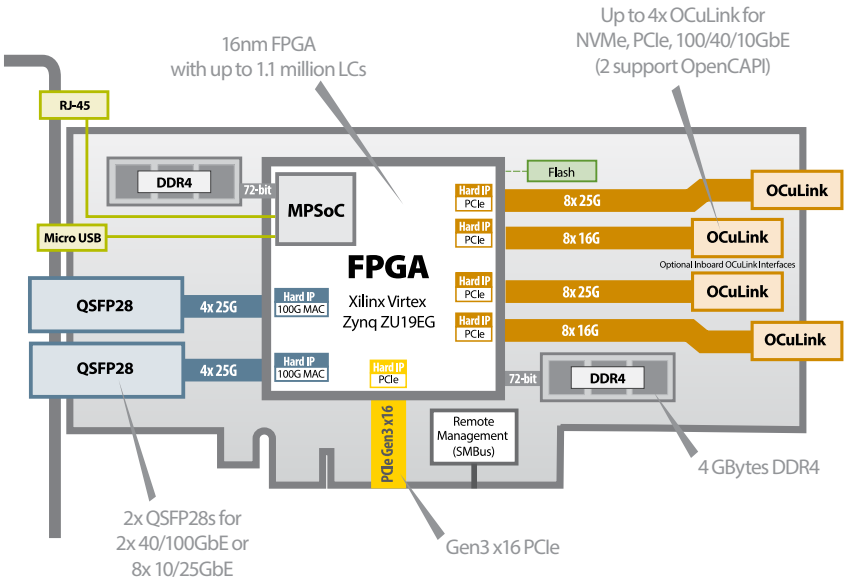
Reliable transport of NVMe frames with low latency and high throughput

The 250-SoC enables the creation of remote, disaggregated storage or Ethernet Just-a-Bunch-of-Flash (EJBOF) to dramatically reduce the storage cost, footprint and power within data centers. The 250-SoC features a Xilinx Zynq UltraScale+ MPSoC device featuring both programmable logic and 64-bit ARM processors. This powerful, feature-rich device coordinates data transfer between two 100GbE network ports, on-board DDR4 memory and a PCIe Gen 3 host interface.



key features

- **2x 100GbE** via 2 QSFP28
- Ideal for **NVMe** storage arrays
- ZU19EG MPSoC: **64-bit Cortex A53 ARM** Zynq UltraScale+



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

VIVADO HL*x* Editions

Additional Services

Take advantage of BittWare's range of design, integration, and support options

Customization

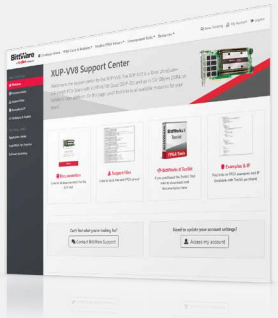
Additional specification options or accessory boards to meet your exact needs.

Server Integration

Available pre-integrated in our TeraBox servers in a range of configurations.

Application Optimization

Ask about our services to help you port, optimize, and benchmark your application.



Service and Support

BittWare Developer Site provides online documentation and issue tracking.

Specifications

FPGA	• Xilinx Zynq UltraScale+
	  • ZU19EG FFVD1760 package
	  • Core speed grade -2
	  • Application ARM: Quad-core Cortex-A53 MP-Core 1.5GHz
	  • Real-Time ARM: Dual-core Cortex-R5 MPCore 600MHz
	  • Graphics Processor: Mali-400 MP2
	• Contact BittWare for other MPSoC options

On-board DDR4 SDRAM	• DDR4 SDRAM FPGA Fabric Memory
	  • One 4GB bank of DDR4 SDRAM x72 bits
	  • Transfer Rate: 2400 MT/s
	• DDR4 SDRAM MPSoC Memory
	  • One 4GB bank of DDR4 SDRAM x72 bits
	  • Transfer rate: 2400 MT/s

Host interface	• x16 mechanical PCIe Gen3 capable • Configurable as x16 up to Gen3, or two x8 PCI in bifurcated slots
QSFP cages	• 2 front panel 4-25Gbps-lane QSFP28 cages • User programmable low jitter clocking supporting 10/25/40/100GbE • Each QSFP28 can be independently clocked
OCuLink	• 1 back panel 8-25Gbps-lane OCuLink connector • 1 back panel 8-16Gbps-lane OCuLink connector • Flexible configuration: NVMe, PCIe, 10/40/100GbE, OpenCAPI • 2 additional optional 8-lane OCuLink connectors (25 & 16Gbps)
Board control (front panel)	• RJ45 1GbE access to the ARM processor • USB connector for UART to ARM processor
Datacenter Deployment, Health Monitoring & Reporting	• On-board power, voltage and temperature monitoring • Field flash update via software • SMBus controlled anti-bricking, fallback and multi-boot • SMBus access to unique board data and tempera-ture sensor
Cooling	• Active and passive heatsink options
Electrical	• On-card power derived from PCIe slot supplies • Power dissipation is application dependent • Typical FPGA power consumption ~50W
Environmental	• Operating temperature: 5°C to 35°C
Quality	• Manufactured to IPC-A-610 Class 2 • RoHS compliant
Form factor	• Half-height, half-length PCIe board • Full-height PCI bracket option

Development Tools

FPGA development	BIST - Built-In Self-Test for CentOS 7 provided with source code (pinout, gateware, PCIe driver and host test application)
Application development	Xilinx Tools - Vivado Design Suite HLx Editions: HDL and C/C++ with HLS

Deliverables

- 250-SoC FPGA board
- Built-In Self-Test (BIST)
- 1-year access to online Developer Site
- 1-year hardware warranty

To learn more, visit **www.BittWare.com**

Rev 2021.11.23 | November 2021

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