

BittWare XUP-P3R PCIe Card

The BittWare XUP-P3R is a 3/4-length PCIe x16 card based on the AMD Virtex UltraScale+ FPGA.

The UltraScale+ devices deliver high-performance, high-bandwidth, and reduced latency for systems demanding massive data flow and packet processing. The board offers extensive memory configurations supporting up to 512 GBytes of memory, sophisticated clocking and timing options, and four front panel QSFP cages, each supporting up to 100 Gbps (4x25) - including 100GbE.

The XUP-P3R also incorporates a Board Management Controller (BMC) for advanced system monitoring, which greatly simplifies platform integration and management. All of these features combine to make the XUP-P3R ideal for a wide range of data center applications, including network processing and security, acceleration, storage, broadcast, and SigInt.



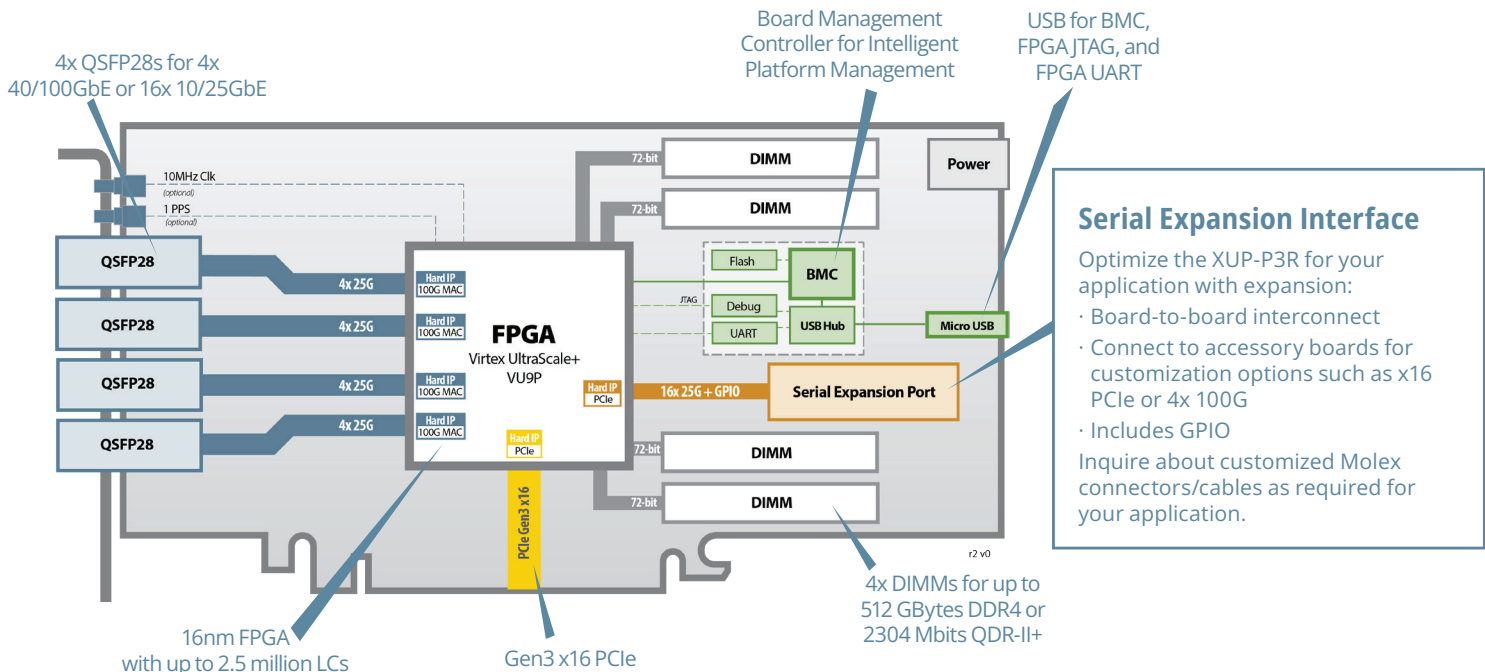
FEATURES AND ADVANTAGES

4x 100GbE via 4 QSFP28
Ideal for network-intensive applications

Up to 512 GBytes DDR4
Large pool of off-chip memory

Up to VU9P: 2.5 million LCs FPGA by AMD
Powerful FPGA resources

Expansion options
SEP interface for accessory boards



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SYSTEM SPECIFICATIONS

FPGA

- Virtex UltraScale+
 - VU9P
 - Core speed grade - 2
- Contact BittWare for additional FPGA options

External memory

- 4 DIMM sites, each supporting*:
 - Up to 128 GBytes DDR4 x72 with ECC
 - Up to 576 Mbits dual QDR-II+ x18 (2 independent 288 Mbit banks)

Host interface

- x16 Gen3 interface direct to FPGA

USB header

- Micro USB: (USB 2.0) for debug and programming FPGA and Flash

Serial expansion port (SEP)

- Expansion interface to FPGA via 20x GTY transceivers (optional; requires second slot)
- 14x GPIO signals to the FPGA

QSFP cages

- 4 QSFP28 (zQSFP) cages on front panel connected directly to FPGA via 16 transceivers
- Each supports 100GbE, 40GbE, 4x 25GbE, or 4x 10GbE and can be combined for 400GbE

On-board Flash

- Flash memory for booting FPGA

Board Management Controller

- Voltage, current, temperature monitoring
- Power sequencing and reset
- Field upgrades
- FPGA configuration and control
- Clock configuration
- I²C bus access
- USB 2.0
- Voltage overrides

Cooling

- Standard: double-width active fan and heatsink
- Optional: double-width passive heatsink
- Optional: double-width advanced passive cooling with heatpipes

Electrical

- On-board power derived from 12V PCIe slot & an AUX connector (6-pin)
- Power dissipation is application dependent

Environmental

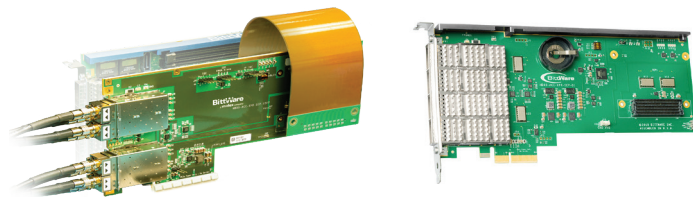
- Operating temperature 5°C to 35°C

Size

- ¾-length, standard-height PCIe dual-slot card
- 111.15mm x 241.30mm (4.376in x 9.500in)

MPN

- XUPP3R-0072



Optional accessory boards provide customization options such as x16 PCIe, 4x 100G, or video transceivers.

DEVELOPMENT TOOLS

System development

- **BittWorks II Toolkit** - host, command, and debug tools for BittWare hardware

FPGA development

- **FPGA Examples** - example Vivado projects, available with the BittWorks II Toolkit
- **AMD Tools** - Vivado® Design Suite

SAFETY & COMPLIANCE

- CE (Europe) EN55032:2015/A11:2020 / EN55024:2010 / EN55035:2017 / EN61000-3-2:2014 / EN61000-3:2013
- UKCA (United Kingdom) BS EN55032:2012/AC:2013 / BS EN55024:2010 / BS EN55035:2017 / BS EN61000-3-2:2014 / BS EN61000-3:2013
- ICES (Canada) ICES-003 Issue 7
- The safety objectives referred to in Article 3 and set out in Annex I of DIRECTIVE 2014/35/EU have been fulfilled
- RoHS compliant to the 2011/65/EU + 2015/863 directive



To learn more, visit bittware.com

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