BPS VU19P

Overview

Blue Pearl Solutions' BPS VU19P delivers an efficient and high-performance solution for early firmware/software development and system validation. The BPS VU19P is a compact and all-in-one system that includes all components - FPGA modules, power control module, and power supply – for maximum flexibility, durability and portability.

The VU19P is based on AMD's Virtex UltraScale +VU19P FPGA and provides 1,184 general purpose I/Os and 44 GTY transceivers on 10 high-speed connectors.

Highlights

- Delivers up to 49M equivalent ASIC gates
- 1,475 high-performance I/Os for peripheral expansions & multi-system connectivity
- 44 high-speed transceivers at 16Gbps
- 2 on-board DDR4 SODIMMs at up to 2,400Mbps totaling 32GB
- Compatible with over 90 Prototype Ready IP
- Feature-rich remote management and runtime controls

Features

Large Capacity and Scalability

- 8.94M System Logic Cells and 165.9Mb of internal memory
- Two on-board DDR4 SO-DIMM sockets can hold up to 72-bit 16GB DDR4 in each socket
- Multiple Logic Systems can be conveniently connected to expand capacity

High Reliability

- Screw-lock design to high-speed I/O connectors
- Self-Tests - Isolate design issues from board issues conveniently with a software GUI
- Monitoring of on-board voltage, current, and temperature with a software GUI
- Automatic shut-down upon detection of over-current, over-voltage, or over-temperatures

High Performance

- Equal trace length for all the I/O connectors
- Up to 200W of power for an FPGA
- On-board support of DDR4 memory can run up to 2,400 Mbps
- High-speed transceivers can run up to 16Gbps

Flexible & Powerful I/O

- 1,152 I/Os and 28 high-speed transceivers through 8 connectors
- 16 high-speed transceivers and 32 GPIOs through 2 PGT I/O connectors
- I/O voltage can be adjusted to 1.2V, 1.35V, 1.5V or 1.8V through runtime software in GUI with 4 status LEDs on-board to indicate I/O voltage

Advanced Clock Management Standalone Mode
- 8 global clocks to be selected from
  - 8 programmable clock sources (0.16 ~ 350MHz)
  - 5 pairs of external clocks through MMCX connectors
  - 1 OSC socket
- 3 design clock outputs through 3 pairs of MMCX connectors
- 3 global resets to be selected from
  - 3 from on-board push buttons
  - 2 from Clock Module Type D
 - 2 from runtime software in GUI

Multi-System Mode
- 8 global clocks to be selected from
  - 8 local programmable clock sources (0.16 ~ 350MHz)
- Compatible with off-the-shelf pre-tested daughter cards
  - 8 global clock sources
- 3 feedback clocks can be output to global clock sources
- 2 global resets sourced from global reset sources

Ease-of-use
- Multiple FPGA configuration options through Ethernet port, USB port, JTAG, and micro SD card
- Remote power on/off/recycle through Ethernet
- Auto detection of daughter cards and cables
- Virtual SWs & LEDs for simple tasks such as changing a setting or indicating a condition remotely
- Virtual UART for firmware debugging
- User Test Area - LEDs, Push Buttons, Switches, and Pin Headers for testing and debugging
- On-board battery charging circuit makes FPGA bin file encryption easy (battery not included)
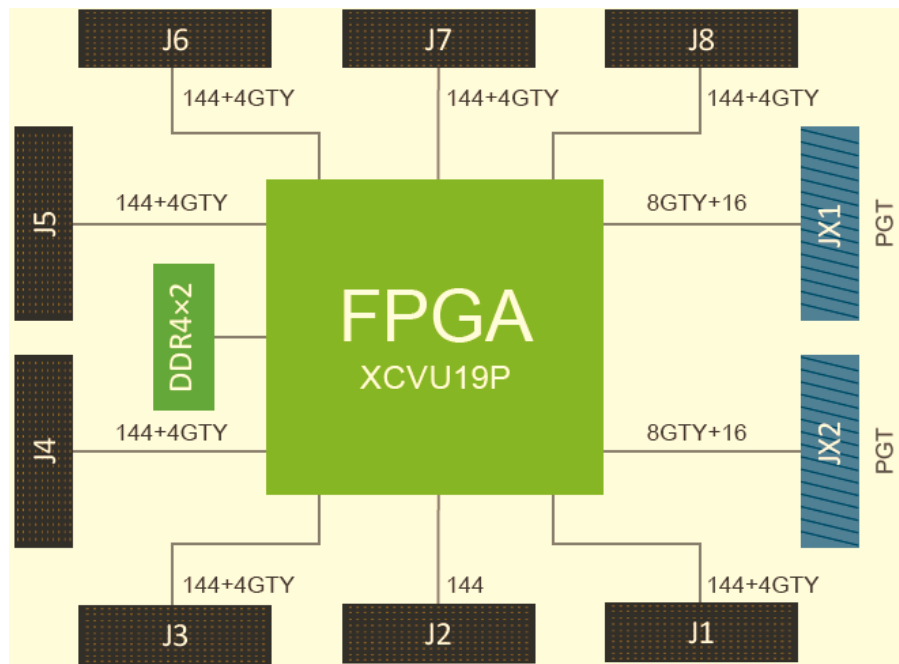
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