BPS VU13P

Overview

Blue Pearl Solutions' BPS VU13P delivers an efficient and high-performance solution for early firmware/software development and system validation. The BPS VU13P 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 VU13P is based on AMD's Virtex UltraScale +VU13P FPGA and provides 676 general purpose I/Os and 48 GTY transceivers on 11 high-speed connectors.

Highlights

- Delivers up to 21M equivalent ASIC gates
- 676 high-performance I/Os for peripheral expansions & multi-system connectivity
- 44 high-speed transceivers at 16Gbps
- 4x QSFP28 optical interfaces, each supporting 100G applications
- Supports MIPI and x8 PCIe Gen3
- Abundant remote management capability

Features

Large Capacity and Scalability

- 3.78M System Logic Cells and 455Mb of internal memory
- 12.288 DPS Slices
- 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 100W of power for an FPGA

Flexible & Powerful I/O

- 576 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

- 6 global clocks to be selected from
  - 6 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
- 1 dedicated clock, reference clock, and reset forpin-multiplexing
- 2 global resets sourced from push button or MMCX
- 1 global reset sourced from runtime software inGUI

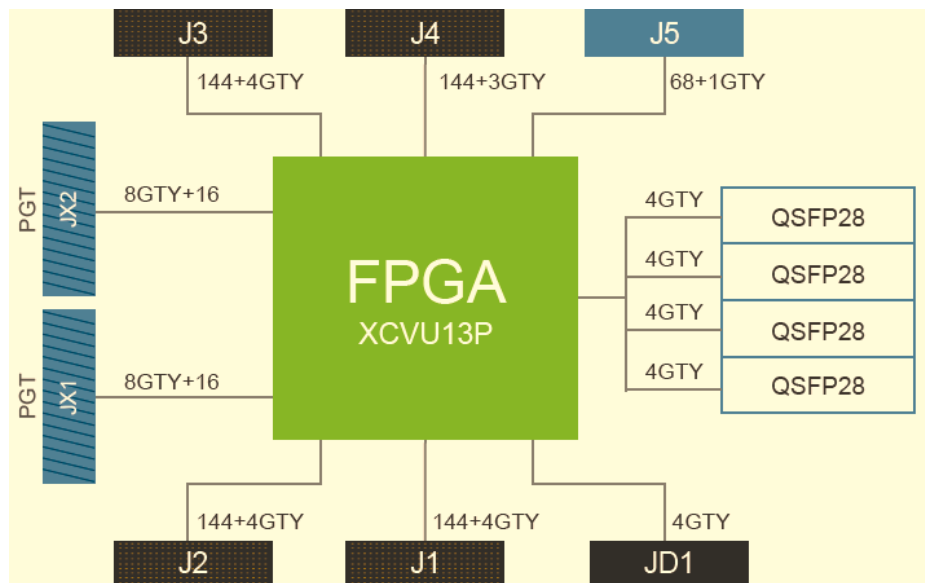**Multi-System Mode**

- 6 global clocks to be selected from
  - 6 local programmable clock sources (0.16 ~ 350MHz)
  - 8 global clock sources

- 3 feedback clocks can be output to global clocksources
- 2 global resets sourced from global reset sources
- 1 dedicated clock, reference clock, and reset for

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)
- Compatible with off-the-shelf pre-tested daughter cards