PC820 UltraScale PCIe Card

PCIe Gen3 with 1x FMC+ Expansion Site

The PC820 is a high-performance, PCI Express card with advanced DSP capabilities and multiple I/O options. It supports one FMC+ VITA 57.4-compliant HSPC FPGA Mezzanine Card (FMC) that is closely coupled to the Virtex or Kintex UltraScale FPGA and a DDR4-2133 SDRAM SO-DIMM. The PC820's PCIe Gen3 interface can support up to eight lanes. The card features a singlelane SFP+ module as a serial peripheral interface. An eight-lane 14 Gbps FireFly connector is also available as an optional serial peripheral interface. The FireFly connection can be made accessible either from inside the chassis or, alternatively, from the bezel if the SPF+ cage is removed.

The PC820 is an excellent choice for high-performance applications that require large-band signal digitization or generation through the use of accelerated frequency domain algorithms.

FMC Options
The PC820 offers one high pin count (HPC) FMC+ site connected to the FPGA. The FMC site is located on the front side of the board and remains within the envelope of the single-slot PCIe card when populated.

For more information about the Abaco Systems FMCs that can be used on the PC820, please visit www.abaco.com. We offer a wide range of ADC, DAC and DSP modules.

Standalone Operation
For a lab test environment or custom system, the PC820 can be run in a standalone mode where power is supplied through an industry standard power connector.

FEATURES:

- Virtex UltraScale (XCVU080, XCVU095, XCVU125) or Kintex UltraScale (XCKU085, XCKU095, XCKU115)
- PCIe Gen3 x8
- 1x FMC+ Site – High Serial Pin Count (HSPC)
- DDR4-2133 SDRAM SO-DIMM
- 1Gb FPGA configuration Flash
- 256Mb Serial Flash
- Single-lane SFP+ interface
- Bidirectional x8 FireFly connection (optional)
- CPLD on board
- Standalone Operation (optional)

ANSI/VITA 47	Air-cooled	
	EAC4	EAC6
Operating temperature	0C to +55C	-40C to +70C
Storage temperature	-40C to +85C	-50C to +100C
Humidity	95%	95%
Operating vibration	5Hz to 100Hz PSD = 0.04g2/Hz 100 Hz to 1000 Hz PSD = 0.04 gs^2/Hz 1000 Hz to 2000 Hz PSD decreasing at 6 dB/octave	5Hz to 100H PSD = 0.04g2/Hz 100 Hz to 1000 Hz PSD = 0.04 gs^2/Hz 1000 Hz to 2000 Hz PSD decreasing at 6 dB/octave
Operating shock	20g, 11 millisecond, half-sine or 20g, 11 millisecond, terminal sawtooth shock pulses in all three axes	20g, 11 millisecond, half-sine or 20g, 11 millisecond, terminal sawtooth shock pulses in all three axes
Operating altitude	-1500 ft to 60,000 ft (with airflow)	-1500 ft to 60,000 ft (with airflow)
Conformal coating	Optional	Optional

abaco
SYSTEMS

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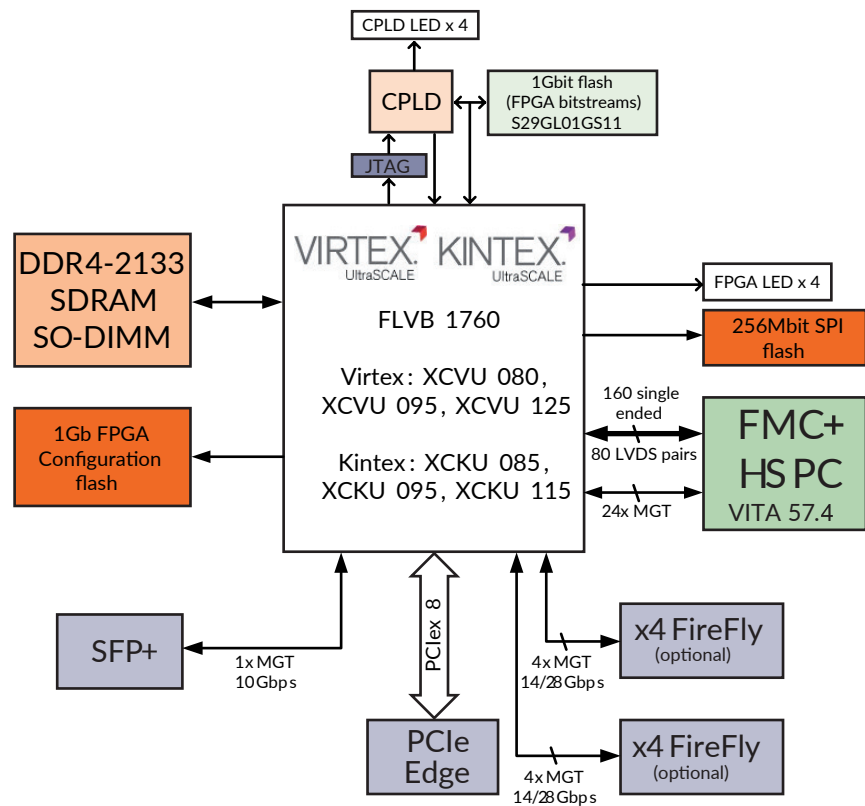
Specifications

Application

- Software Defined Radio (SDR)
- RADAR/SONAR Image Processor
- Data center processing and communication
- Satellite communication systems
- RADAR & Radio Jamming
- Baseband Communication Transceivers
- Multi-Channel digital receivers
- Event Processor & Recorder
- A/D and D/A Signal Processing

Support

- 4FM GUI offers multiple functions including the ability to monitor voltage and temperature; perform memory tests; measure the PCIe bandwidth; update FPGA firmware; and access StellarIP
- StellarIP is available for this product. A simple way to design FPGA firmware with automated code and bitstream generation.
- Data analyzer makes it possible to display digitized data real time
- User Manual
- Performance Report
- Support provided on Abaco Systems' support forum private boards
- Reference designs

AS9100 Certified

Block diagram

Ordering information

Talk to us about your algorithmic requirements, Abaco Systems is a full-service firmware and software development house. We are a specialist at high performance FFT and Video Processing. Check with us, we may have IP Cores that meet requirements for your application, right off the shelf.

WE INNOVATE. WE DELIVER. YOU SUCCEED.

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