ALPHA DATA

ADM-PCIE-8K5

Applications

- High-Performance Data Processing
- Video Processing
- Machine Learning
- High Performance Computing (HPC)
- Network Acceleration

Board Features

- 2x SFP+ Cages
- 2x Firefly Interfaces
- Heatsink with passive and fan cooling options

FPGA Features

- 6x PCI Express Gen3 x8 cores

Summary

The ADM-PCIE-8K5 is a half-length, low profile, PCI Express Add-In Card featuring the powerful and efficient Xilinx Kintex UltraScale KU115-2 FPGA.

The ADM-PCIE-8K5 features two independent channels of DDR4 memory capable of 2400MT/s (fitted with two 8GB ECC banks as standard 16GB - optional 32GB available), dual SFP+ cages providing 2x 10GbE/16G Fiber Channel (Gen 5) capability. Dual Firefly connectors for up to 4x16Gbps per connector. Voltage/temperature/current control and monitoring. The board is supplied with an air-cooled heat sink and optional fan for development systems without sufficient airflow over the PCIe slots. For deployment in rack-mount server systems the fan is not required (passive cooling).

IBM Power8 and CAPI compliant

Target Device

Xilinx Kintex UltraScale: XCKU115-2 (FLVA1517E)

LUTs = 663k
FFs = 1326k
DSPs = 5520
BRAM = 75.9Mb

6x PCI Express Gen3 x8 cores

Application Data Memory

2x FBGA-SDRAM 1G x 72 (8GiB) DDR4-2400

Other User Memory

2kb I2C EEPROM - Non-volatile data storage for the user design (i.e. storing MAC addresses).

FPGA Configuration Memory

BPI 1GBit Flash Memory
Configured as 2 x 512MBit zones

FPGA Configuration Modes

From onboard Flash
Over USB/JTAG

Deliverables

ADM-PCIE-8K5 Board
One Year Warranty
One Year Technical Support
Xilinx Vivado board file
Xilinx SDAccel DSA

Host Interface

PCI Express Gen3 x8

Board Format

1/2 Length Low profile x8 PCIe form Factor
WxHxD = 173mm x 68.9mm x 17.5mm
Weight = 200g

Communications Interfaces

2x SFP+ 1x16Gbps - User Configurable, includes 10G Ethernet

2x Firefly Connector 4x16Gbps - PCIe, Fibre Channel, Infiniband, Ethernet, Aurora
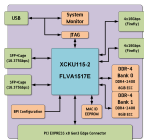
Input/Output Interfaces

Other Interfaces

USB board management (built-in JTAG).

Board Management

The board management logic has the ability to monitor temperature, voltage, and current of the system to check on the operation of the board. The monitoring is implemented using a microcontroller providing a host USB interface. The information can also be accessed directly from the microcontroller over the USB interface on the front panel. When enabled**, IPMI can also be used to communicate with the system monitor, allowing for remote communication and management with the ADM-PCIE-8K5.
** IPMI is disabled by default and should only be enabled when the board is installed in an IPMI compliant system. Please contact the factory for details on enabling IPMI on the ADM-PCIE-8K5

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Support

Optional integrated Board Support Package (BSP) including extensive
FPGA example designs, plug and play drivers, and a mature Application
Programming Interface (API)
CAPI Compliant (optional CAPI board support package available).

Environmental Specification

Temperature Ranges

Operating Temperature Range : 0°C to +55°C

Storage Temperature Range : -40°C to +85°C

Operating Humidity : Up to 95% (non-condensing)

EMC Standards

EMC Directive 2014/30/EU
55022:2010
55032:2015
55024: 2010 + A1:2015
55035: 2017
EN 61000-3-3:2014
EN 61000-3-3:2013

Additional Declarations:
FCC/CFR 47: Part 15: 2016 Radiated Emissions (to 40GHz) Conducted
Emissions ANSI C63.4:2014, Class A

Other Certifications:
KN32 Class A
KN35
VCCI (V:3/2014.04)
ICES-003:Issue 6
AS/NZS CISPR 22: 2009 + A1:2010
CISPR 22:2008
CISPR 32:2015, Class A

<table>
<tr><td colspan="3">Ordering Information</td></tr>
<tr><td colspan="3">Order Code: ADM-PCIE-8K5(m)(o)(f)(g)(j)(NF)</td></tr>
<tr><td>Option</td><td>Code</td><td>Description of Options</td></tr>
<tr><td>Memory</td><td>m</td><td>blank = 16GB (DDR4-2400) onboard memory,
/32GB = 32GB (DDR4-1866) onboard memory</td></tr>
<tr><td>SFP+ Cages and Optical Modules</td><td>o</td><td>blank = SFP+ Cages only,
Optionally fitted Modules
/D10 = 2x 10 Gigabit SFP+ optical modules,
/D14 = 2x 14 Gigabit SFP+ optical modules</td></tr>
<tr><td>FireFly® Optical Modules</td><td>f</td><td>blank = not fitted,
/F = 2x 14 Gigabit FireFly® optical module - MPO Front Panel (full height bracket required)</td></tr>
<tr><td>GPIO (RS232/485)</td><td>g</td><td>blank = RS232/485 NOT available,
/G = RS232/485 available</td></tr>
<tr><td>Si5328 Jitter Attenuator</td><td>j</td><td>blank = Si5328 NOT fitted,
/J = Si5328 Si5328 fitted</td></tr>
<tr><td>No fan option</td><td>NF</td><td>blank = optional cooling fan installed,
/NF = no fan</td></tr>
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