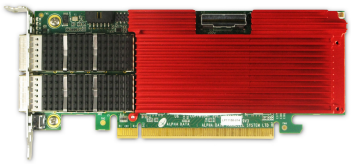
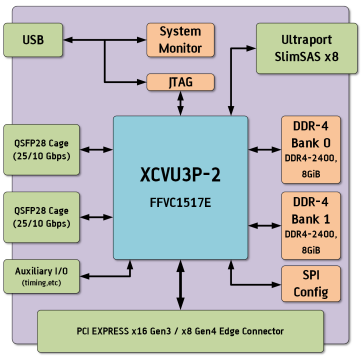
ADM-PCIE-9V3

9th April 2019 **Datasheet Revision: 2.1**





Applications

- High-Performance Network Accelerator
- Data Center Accelerator
- High Performance Computing (HPC)
- Data Processing
- System Modeling
- Market Analysis

Board Features

- 1x OpenCAPI Interface
- 2x QSFP28 Cages
- Shrouded heatsink with passive and fan cooling options

FPGA Features

- 3x 100G Ethernet MACs (incl. KR4 RS-FEC)
- 3x 150G Interlaken cores
- 2x PCI Express x16 Gen3 / x8 Gen4 cores

Summary

The ADM-PCIE-9V3 is a half-length, low profile, PCI Express Add-In Card featuring the powerful and efficient Xilinx Virtex UltraScale Plus VU3P-2 FPGA.

16 lane PCIe Gen3 or 8 lane PCIe Gen4 capable Interface.

Front IO with 2x QSFP28 sockets, each supporting one 100GbE or four 25GbE interfaces. Onboard Ultraport SlimSAS Connector for OpenCAPI Connectivity.
Two 1G x72 DDR4-2400 ECC memory banks each provide 8GiB of on-board DDR4-2400 memory (72 bits wide).

System monitoring of temperature, voltage, and current gives developers accurate feedback of power utilization for their designs.
This card comes with low-profile and full-height front brackets (low-profile bracket fitted as standard) and an optional blower for low air-flow systems.

Target Device

Xilinx Virtex UltraScale Plus: XCVU3P-2 (FFVC1517)

LUTs = 394k
FFs = 788k
DSPs = 2280
BRAM = 25.3Mb
URAM = 90.0Mb

3x 100G Ethernet MACs (incl. KR4 RS-FEC)
3x 150G Interlaken cores
2x PCI Express x16 Gen3 / x8 Gen4 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

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

FPGA Configuration Modes

From onboard Flash
Through USB board management (built-in JTAG)
Partial Reconfiguration (via MCAP) Over PCI Express

Deliverables

ADM-PCIE-9V3 Board
One Year Warranty
One Year Technical Support
Xilinx Vivado board file
Xilinx SDAccel DSA

Host Interface

PCI Express Gen3 x16 / Gen4 x8 or OpenCAPI

Board Format

1/2 Length low profile x16 PCIe form Factor
WxHxD = 174mm x 68.9mm x 17.45mm
Weight = 230g

Communications Interfaces

2x QSFP28 4x28Gbps - User Configurable, includes 10/25/40/100G Ethernet

1x Ultraport SlimSAS 8x25Gbps - OpenCAPI

Input/Output Interfaces

Other Interfaces

USB board management (built-in JTAG)

customizable GPIO

Board Management

The ADM-PCIE-9V3 houses a system monitoring chip which is able to provide real-time temperature, voltage and current readings of the system, as well as reconfigure programmable clocks and much more. The system monitor can be accessed directly through the USB interface via the front panel, the UART connection to the target FPGA or through the SMBus interface on the card's PCI Express edge connector. When enabled**, IPMI can also be used to communicate with the system monitor, allowing for remote communication and management with the ADM-PCIE-9V3.
** 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-9V3.

Support

Optional integrated Board Support Package (BSP) including FPGA example designs, plug and play drivers and API.

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

RoHS Directive 2011/65/EU
50581: 2012

Ordering Information

Order Code: ADM-PCIE-9V3 (m)(q)(g)

Option	Code	Description of Options
DDR4 Memory Options	m	blank = 8Gb parts, 8GiB DDR4-2400 per bank, 16GiB total, /32G = 16Gb DDR4-1866 parts, 16GiB per bank, 32 GiB total
QSFP cages and Optical Modules	q	blank = QSFP28 cages only, /Q10 = 2x 40G QSFP Optical module (40GBASE-SR4 150m), /Q14 = 2x 56G QSFP Optical module (56G Infiniband 100m), /Q25 = 2x 100G QSFP Optical module (100GBASE-SR4 100m)
GPIO (available in full height bracket only)	g	blank = none, Contact alpha data for customizable options (timing input, RS232, RS485, Direct FPGA Connections)

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