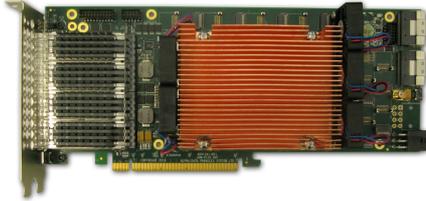


AD01341



## Applications

- High-Speed Communications Hub
- In-Network Compute
- Network Accelerator
- High Performance Computing (HPC)
- Data Processing
- System Modeling
- Market Analysis

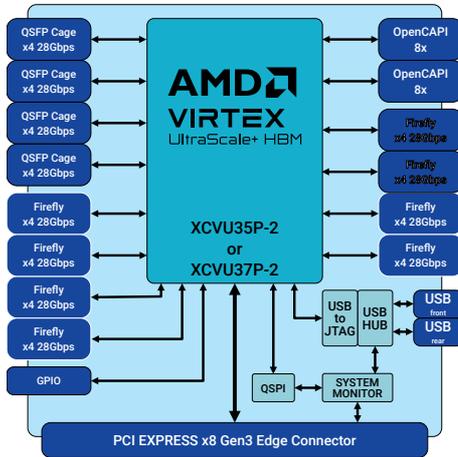
## Summary

The ADM-PCIE-9H7 is a high-performance FPGA processing card intended for data center applications using Virtex UltraScale+ High Bandwidth Memory FPGAs from AMD.

The ADM-PCIE-9H7 utilizes the AMD Virtex UltraScale Plus FPGA family that includes on substrate High Bandwidth Memory (HBM Gen2). This provides exceptional memory Read/Write performance while reducing the overall power consumption of the board by negating the need for external SDRAM devices. There are also a large number of high speed interface options available including 100G Ethernet MACs, 150G Interlaken cores and multiple PCI Express cores. To make the most of these interfaces the ADM-PCIE-9H7 is fitted with 4 QSFP28 Cages, up to 8 Firefly interfaces (each 4x 28Gbps) and two OpenCAPI interfaces for ultra low latency communications.

## Board Features

- 2x OpenCAPI Interfaces
- 4x QSFP28 Cages
- 8x Firefly Interfaces
- Shrouded heatsink with passive and fan cooling options



## Target Device

AMD Virtex UltraScale Plus  
XCVU37P-2E (FSVH2892)

LUTs = 1304k FFs = 2607k DSPs = 9024  
BRAM = 70.9Mb(47.3Mb) URAM = 270.0Mb  
(180.0Mb)

- 2x 4GB HBM Gen2 memory (32 AXI Ports provide 460GB/s Access Bandwidth)
- 8x 100G Ethernet MACs (including KR4 RS-FEC)
- 4x 150G Interlaken cores
- 6x PCI Express x16 Gen3 / x8 Gen 4 cores (CCIX Capable)

## Application Data Memory

2x 4GB High Bandwidth Memory (HBM) - up to 460GB/s (over 32 AXI Interfaces)

## Other User Memory

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

## Configuration Memory

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

## Configuration Modes

- From onboard Flash
- Through USB board management (built-in JTAG)
- Through IPMI System Monitoring and Configuration interface
- Partial Reconfiguration over PCI Express

## Deliverables

- ADM-PCIE-9H7 Board
- One Year Warranty
- One Year Technical Support

## Host Interface

1x PCI Express Gen3 x16 or 1x/2x\* PCI Express Gen4 x8 (CCIX Capable) or OpenCAPI

## Communications Interfaces

4x QSFP28 4x28Gbps - 10/25/40/100G Ethernet, PCIe, Fiber Channel, Infiniband, Aurora

2x Ultraport SlimSAS 8x25/28Gbps - OpenCAPI, 10/25/40/100G Ethernet, PCIe, Fiber Channel, Infiniband, Aurora

8x Firefly Interfaces 4x28Gbps - 10/25/40/100G Ethernet, PCIe, Fiber Channel, Infiniband, Aurora

## Input/Output Interfaces

### Other Interfaces

Micro USB for JTAG support (FPGA programming and debug) and system monitor

Customizable GPIO

## Board Management

The ADM-PCIE-9H7 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-9H7.

\*\* 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-9H7.

**Support**

In development an optional integrated Board Support Package (BSP) including FPGA example designs, plug and play drivers and API.

**Board Format**

3/4 Length Double Slot Width full profile x16 PCIe form Factor  
 WxHxD = 267.2mm x 125.2mm x 41.9mm  
 Weight = 1300g

**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**

FCC 47CFR Part 2  
 EN55022 Equipment ClassB

**RoHS Directive 2011/65/EU**  
 50581: 2012

**Ordering Information**

**Order Code: ADM-PCIE-9H7(S)**

Option	Code	Description of Options
FPGA Speed	S	blank = XCVU37P-2E Fitted, /3E = XCVU37P-3E Fitted