

AD01473



## Applications

- Low Latency Trading
- In-Network Compute
- High-Frequency Trading
- High-speed Communications Hub

## Summary

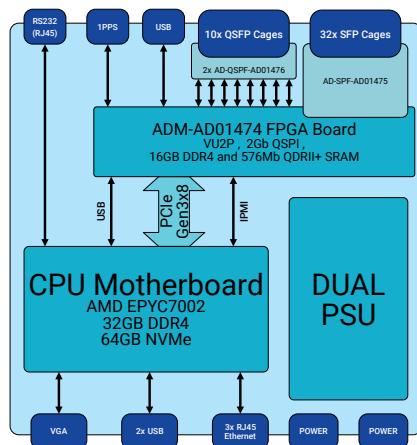
The ADA-R9100 is a 1U 19" Rack Mount appliance based around the AMD Ultrascale+ VU2P Ultra Low Latency FPGA. This appliance is designed to provide the lowest latency access to the highest number of ultra-low latency GTF transceivers that are the unique feature of the VU2P device.

32 Extremely low latency channels are provided via SFP+ connections on the front panel, with trace delays of less than 1ns. The other 40 low latency channels, have trace delays of less than 3ns and connect to 10 QSFP28 connections on the front panel.

Multiple clock jitter attenuators are available on the FPGA board to allow source synchronous clocking of GTF receivers. The FPGA board also features 16GB DDR4 SODIMM and 576Mb of QDR11+ SRAM.

The appliance is data center deployment-ready, and can be remotely managed using the embedded ASRockRack ROME4ID-2T motherboard. This platform features an ATSPPEED BMC that allows remote management and power cycling of the system. The CPU sub-system features an AMD EPYC7002 series processor, 32GB DDR4 and 64GB NVMe pre-installed with Ubuntu Linux OS. This system is powerful enough to run the AMD Vivado toolset for advanced remote debug and development. Additional comprehensive system monitoring of the complete appliance is available in standby and fully powered up via Ethernet, IPMI and USB functionality. The CPU sub-system can connect to the FPGA via PCIe Gen3x8.

The appliance features a dual redundant power supply, for server-class reliability



## Target Device

AMD Virtex UltraScale Plus  
XCVU2P-3 (FSVJ2104)

LUTs = 787 FFs = 1722

DSPs = 1680

BRAM = 76Mb URAM = 180Mb

72x Accessible Ultra-Low Latency GTF transceivers

1x PCI Express x8 Gen4 core

## Configuration Memory

QSPI 2GBit Flash Memory

## Configuration Modes

## Deliverables

ADA-R9100 Board  
One Year Warranty  
One Year Technical Support

## Board Features

- Rack-mount 1U Chassis
- Highly optimised signal tracking for ultra low-latency QSFP-DD Communications
- 32x SFP+ cages
- 10x QSFP Cages
- Integrated ADM EPYC CPU System

## Host Interface

PCI Express Gen4 x8

## Communications Interfaces

32x SFP+ 1x28Gbps - For 10/25G Ethernet

10x QSFP28 4x28Gbps - For 10/25/40/100G Ethernet

## Input/Output Interfaces

### Chassis Ethernet

3x 1/10G RJ45 Ethernet for CPU Sub-system

## Other Interfaces

USB (front socket) board management (built-in JTAG)

Isolated PPS Timing Input

## Board Management

The ADA-R9100 houses an ASRockRack ROME4ID-2T server-class embedded motherboard for local application execution and chassis management. This features a powerful AMD EPYC7002 series processor, 32GB DDR4 and 64GB NVMe pre-installed with Ubuntu Linux OS. It also features an ATSPPEED BMC to allow remote management and power cycling of the system, as well as remote system monitoring of the FPGA card and front panel modules and cables even when powered down to standby mode.

**Support**

TBC

**Board Format**

1U 19" Rack Mount

**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)

**Ordering Information****Order Code: ADA-R9100**