

OPEN

Compute Project

Project Olympus

US1-EPYC

Brief Specification

<Revision:1.0>

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Table of Contents

1. Overview	3
2. High Level System Features	3
3. Motherboard Block Diagram	4
4. System Placement	4
5. Motherboard Placement	5

1. Overview

The brief specification describes Project Olympus AMD platform server design as US1-EPYC(Universal Server 1U-EPYC). The 1U server includes as below:

- Chassis/PSU/Fan: Leverage from Microsoft Project Olympus
- AMD platform Motherboard: designed by Quanta, refer to “Project Olympus AMD EPCY Processor Motherboard Specification”

OCP contribution by Quanta:

- Design files of EPCY processor motherboard

2. High Level System Features

Table 1 High Level System Features

Items	Description
Form Factor	1U height & full width system(441m(W)x 948.2mm(D)x 43.3(H)) MB design is for both 1U/2U system
PSU	1x Project Olympus PSU with maximum output of 1000W
Fan	6x 4028 Fans with N+2 redundancy support
Processor	AMD EPYC processor(SP3 socket, 4094 pins), up to 180W per CPU(supports for all server class SKUs) Dual sockets
Memory	Total 32 DIMM slots, 16 DIMMs per CPU, 2 DIMMs per channel RDIMM/LRDIMM/NVDIMM type support DDR4 transfer rates up to 2667MT/s(1 DIMM per channel)
Storage	SATA interface: -4 discrete Conn@ 6.0 Gb/s(in US1-EPYC case, only use one port for OS drive) -4 expansion Conn@ 6.0Gb/s (MiniSAS HD Conn)
Front IO Access	2x USB3.0 Conn
PCI-Express Expansion	-2 PCIe x8 slots: for PCIe M.2 Riser cards(slot1/2) -2 PCIe x16 slots: for standard PCIe x16 cards for AVA card and NIC card(slot3/5) -1 PCIe x32 slot: for standard PCIe x16 or custom PCIe x32 card for FPGA(slot4) -4 M.2 on-board Conn: for 60/80/110mm M.2 drive -1 PCIe x8 Expansion: 1 OCuLink expansion cable for FPGA card in slot4 -2 PCIe x4 Expansion: 2 MiniSAS HD Conn with PCIe x4 for flexible usage
Server Management	BMC Aspeed AST2520 with 1xRJ45 MGMT Conn
Security	Trusted Platform Module (TPM 2.0) to support secure boot
Networking	Add-in card type NIC card support without LOM

3. Motherboard Block Diagram

The block diagram describes how to maximize the critical bus arrangement of EPYC processor, like DDR/PCIe/SATA on the motherboard

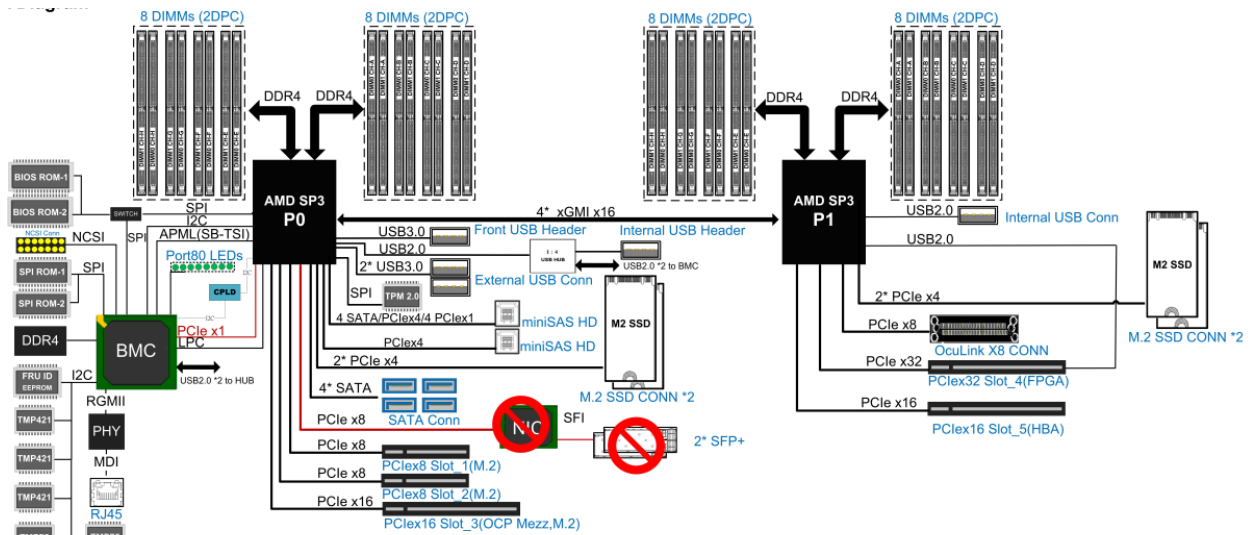
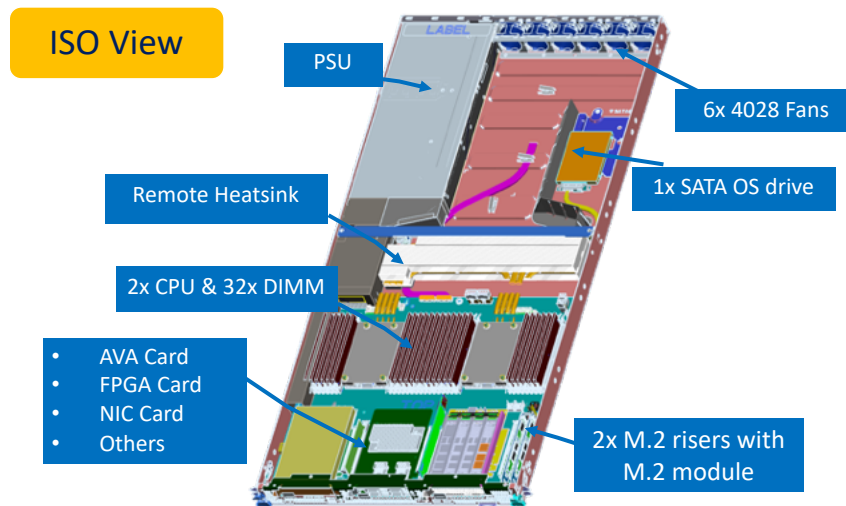


Figure 1 US1-EPYC Motherboard Block Diagram

4. System Placement



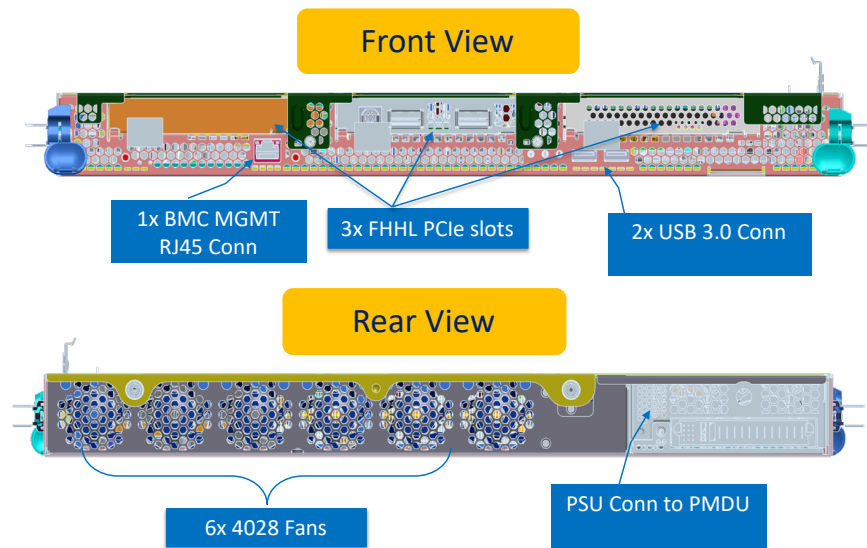


Figure 2 System Placement

5. Motherboard Placement

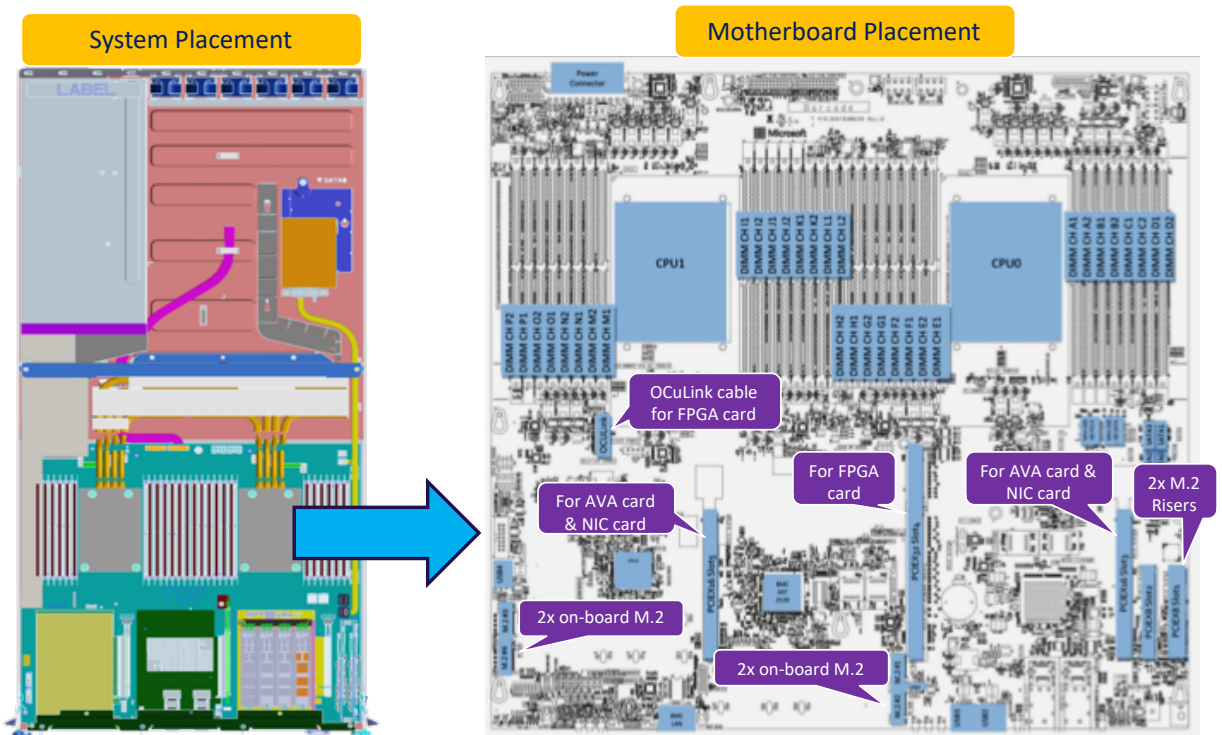


Figure 3 Motherboard Placement