

COM-HPC Altra

Server Type COM-HPC Size E Module with ARM-based Ampere Altra Processor

Features

- ARM-based architecture, up to 80 cores at 175W TDP
- Up to 768GB DDR4 with 6 individual memory channels
- Open source EDKII, seamless support for popular OSes
- 64 PCIe Gen4 lanes (3 x16 available)
- Dedicated PCIe and IPMB for remote management

Preliminary



Specifications

• Core System

SoC

Ampere Computing, Ampere Altra Series Processors

- Q80-28 80 cores, 2.6(2.8)GHz, 175W TDP
- Q32-17 32 cores, 1.5(1,7)GHz, 58W TDP

Note: Additional SKUs are supported by project basis

Memory

Six DIMM sockets with individual memory channels

Up to 768GB (6x 128GB) DDR4 RDIMM memory, up to 3200MT/s

Embedded BIOS

Open Source EDKII

Cache

TBC

Expansion Buses

64 PCI Express Gen4 Lanes

- 8 PCI Express Lanes 0-7 (J1): configurable to x8, x4, x2
- 8 PCI Express Lanes 8-15 (J1): configurable to x8, x4, x2
- 16 PCI Express Lanes 16-31 (J2): configurable to x16, x8, x4
- 16 PCI Express Lanes 32-47 (J2): configurable to x16, x8, x4
- 16 PCI Express Lanes 48-63 (J2): configurable to x16, x8, x4

CCIX for heterogeneous computing (by project basis)

SMBus (system), 2x I2C (user), GP_SPI

Module Management Controller

Supports: IPMB (for communication with carrier BMC), voltage/current monitoring, power sequence debug support, AT/ATX mode control, logistics and forensic information, watchdog timer, fan control

Debug Headers

- 40-pin multipurpose flat cable connector for use with DB40 HPC debug module providing BIOS POST code LED, MMC/EC access, SPI BIOS flashing, power testpoints, debug LEDs

• Ethernet KR

MAC

External LAN controller

Interface

Up to 4x 10GBASE-KR (TBC)

• NBASE-T Ethernet

Intel MAC/PHY

Intel® Ethernet Controller I210

Interface

10/100/1000 Mbit/s Ethernet connection

• Remote Management Dedicated Interfaces

PCIe_BMC

Dedicated PCIe for carrier BMC, mainly used for KVM (carrier BMC emulates graphics card)

IPMB

Provided by MMC, dedicated connection between carrier BMC and module MMC

• Multi I/O and Storage

USB

4x USB 3.0/2.0/1.1 (USB 0,1,2,3)

Serial

2x UART ports with console redirection

GPIO

12x GPIO from EC (SEMA board controller; GPI with interrupt TBC)

• TPM

Chipset

Infineon

Type

TPM 2.0 (SPI based)

• Power

Standard Input

ATX: 12V±5% / 5Vsb ±5%; or AT: 12V±5%

Management

ACPI 5.0 compliant

Power States

TBC

Specifications

- **Mechanical and Environmental**

Form Factor

PICMG COM-HPC: Rev 1.0 Server Type

Dimension

Size E: 200 mm x 160 mm

Operating Temperature

Standard: 0°C to 60°C (storage: -20°C to 80°C)

Humidity

5-90% RH operating, non-condensing

5-95% RH storage (and operating with conformal coating)

Shock and Vibration

IEC 60068-2-64 and IEC-60068-2-27

MIL-STD-202F, Method 213B, Table 213-I, Condition A and Method 214A, Table 214-I, Condition D (TBC)

HALT

Thermal Stress, Vibration Stress, Thermal Shock and Combined Test

- **Operating Systems**

Standard Support

Yocto project based Linux 64-bit, Ubuntu 64-bit (TBC)

- **Ordering Information**

Modules

Module Number	Description/Configuration
COM-HPC-ALTRA-Q80-28	Server Type COM-HPC Size E module with Ampere Altra Q80-28, 80C
COM-HPC-ALTRA-Q32-17	Server Type COM-HPC Size E module with Ampere Altra Q32-17, 32C

* For processor SKUs not listed, please contact your ADLINK representative for availability.

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Functional Diagram

