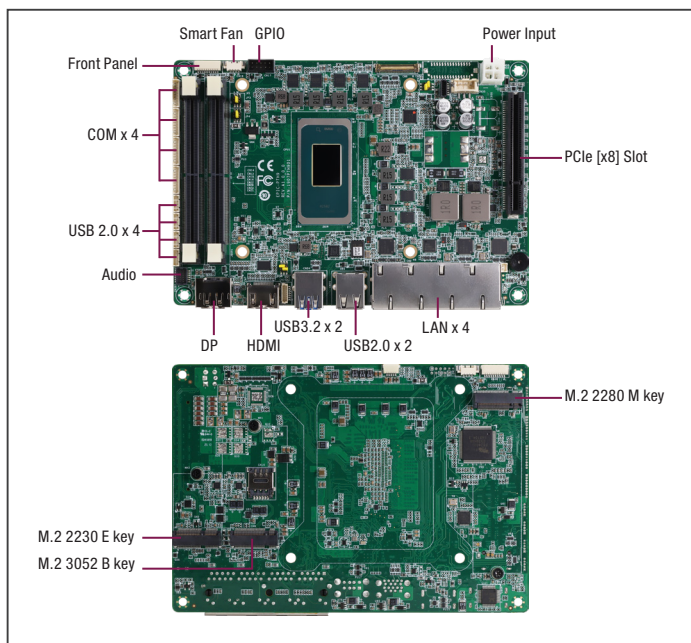


EPIC-PTH9

4" EPIC Board with Intel® Core™ Ultra Series 3 Processors



Features

- Intel® Core™ Ultra Series 3 processors, up to 65W
- Intel Graphic Engine 4Xe/12Xe, up to 180 TOPs
- DDR5 SODIMM 7200 x 2, up to 128GB
- Triple Display: LVDS / eDP (Optional) + HDMI 2.1 + DP 2.1
- 2.5GbE x 3, GbE x 1
- USB 3.2 Gen 2 x 2, USB 2.0 x 6
- M.2 M-Key, M.2 B-Key, M.2 E-Key
- PCIe 5.0 [x8] Slot x 1
- COM x 4, GPIO 8-bit, TPM 2.0, DC 9Vin - 24Vin

| | |
|--|--|
| Video | DP 2.1 x 1 HDMI 2.1 x 1 |
| Internal I/O | |
| USB | USB 2.0 x 4 |
| Serial Port | COM 1 & COM 2 (RS-232/422/485, supports 5V/12V/RI) COM 3 & COM 4 (RS-232 only, supports RI only) |
| Video | LVDS x 1, Dual-Channel 18/24-bit, up to 1920 x 1080 eDP x 1, up to 3840 x 2160 (Optional) |
| SATA | — |
| Audio | Audio Header x 1 |
| DIO/GPIO | GPIO 8-bit |
| SMBus/I2C | SMBus / I2C / Timed GPIO (Default: SMBus, change by BOM) |
| Touch | — |
| Fan | 4-pin Smart Fan x 2 |
| SIM | Nano SIM x 1 |
| Front Panel | Power Button, Reset Button, Power LED, Buzzer |
| Others | — |
| Expansion | |
| Mini PCI-E/mSATA | — |
| M.2 | M.2 3052 B-Key x 1 (PCIe 4.0 [x1] + USB 3.0 / PCIe 4.0 [x2] x 1) Default: PCIe 4.0 [x2], change by BOM M.2 2280 M-Key x 1 (PCIe 4.0 [x4]) M.2 2230 E-Key x 1 (PCIe 4.0 [x1] + USB 2.0) |
| Others | PCIe 5.0 [x8] Slot x 1 (support by Intel® Core™ Ultra 7 Processor 356H CPU only) |
| Environment & Certification | |
| Operating Temperature | -4°F – 158°F (-20°C – 70°C) |
| Storage Temperature | -40°F – 185°F (-40°C – 85°C) |
| Operating Humidity | 0% – 90% relative humidity, non-condensing |
| MTBF (Hours) | 860,096 |
| EMC | CE/FCC Class A |

Specifications

| | |
|---------------------|---|
| System | |
| Form Factor | 4" EPIC Board |
| CPU | Intel® Core™ Ultra Series 3 processors: Intel® Core™ Ultra X7 Processor 358H (16C/16T, up to 4.8 GHz, 25W) Intel® Core™ Ultra 7 Processor 356H (16C/16T, up to 4.7 GHz, 25W) |
| Chipset | Integrated with Intel® SoC |
| Memory Type | DDR5 7200, Dual Channel SODIMM x 2, Max 128GB (Non ECC) |
| BIOS | UEFI |
| Wake On Lan | Yes |
| Watchdog Timer | 255 Levels |
| Security | TPM 2.0 |
| RTC Battery | Lithium Battery 3V/240mAh |
| Dimension | 4.53" x 6.50" (115mm x 165mm) |
| OS Support | Windows 11 (64-bit) Ubuntu 26.04 kernel 7.0.0-14 generic |
| Power | |
| Power Requirement | 9V – 24V (Optional: 12V) |
| Power Supply Type | AT/ATX (Default: AT) |
| Connector | 4-pin ATX Connector |
| Power Consumption | Intel® Core™ Ultra X7 Processor 358H, DDR5 32GB, 8.23A @+12V (Typical) Intel® Core™ Ultra X7 Processor 358H, DDR5 32GB, 9.32A @+12V (Max) |
| Display | |
| Controller | Intel® Graphics (Intel® Core™ Ultra 9 Processor 386H / Intel® Core™ Ultra 7 Processor 356H) Intel® Arc™ B390 GPU (Intel® Core™ Ultra X9 Processor 388H / Intel® Core™ Ultra X7 Processor 358H) |
| LVDS/eDP | LVDS x 1, Dual-Channel 18/24-bit, up to 1920 x 1080 eDP x 1, up to 3840 x 2160 (Optional) |
| Display Interface | HDMI 2.1 x 1, up to 3840 x 2160 @60Hz DP 2.1 x 1, up to 3840 x 2160 @60Hz |
| Multiple Display | Up to 3 Simultaneous Displays |
| Audio | |
| CODEC | Realtek ALC897 |
| Audio Interface | Line-In / Line-Out / Mic |
| Speaker | — |
| External I/O | |
| Ethernet | Intel® Ethernet Connection I219, 1GbE RJ-45 x 1 (PXE support x 1) Intel® Ethernet Controller I226, 2.5GbE RJ-45 x 3 (PXE support x 1) |
| USB | USB2.0 x 2 USB3.2 Gen2 x 2 |
| Serial Port | — |

Packing List

- EPIC-PTH9 x 1
- Screw kit x 1

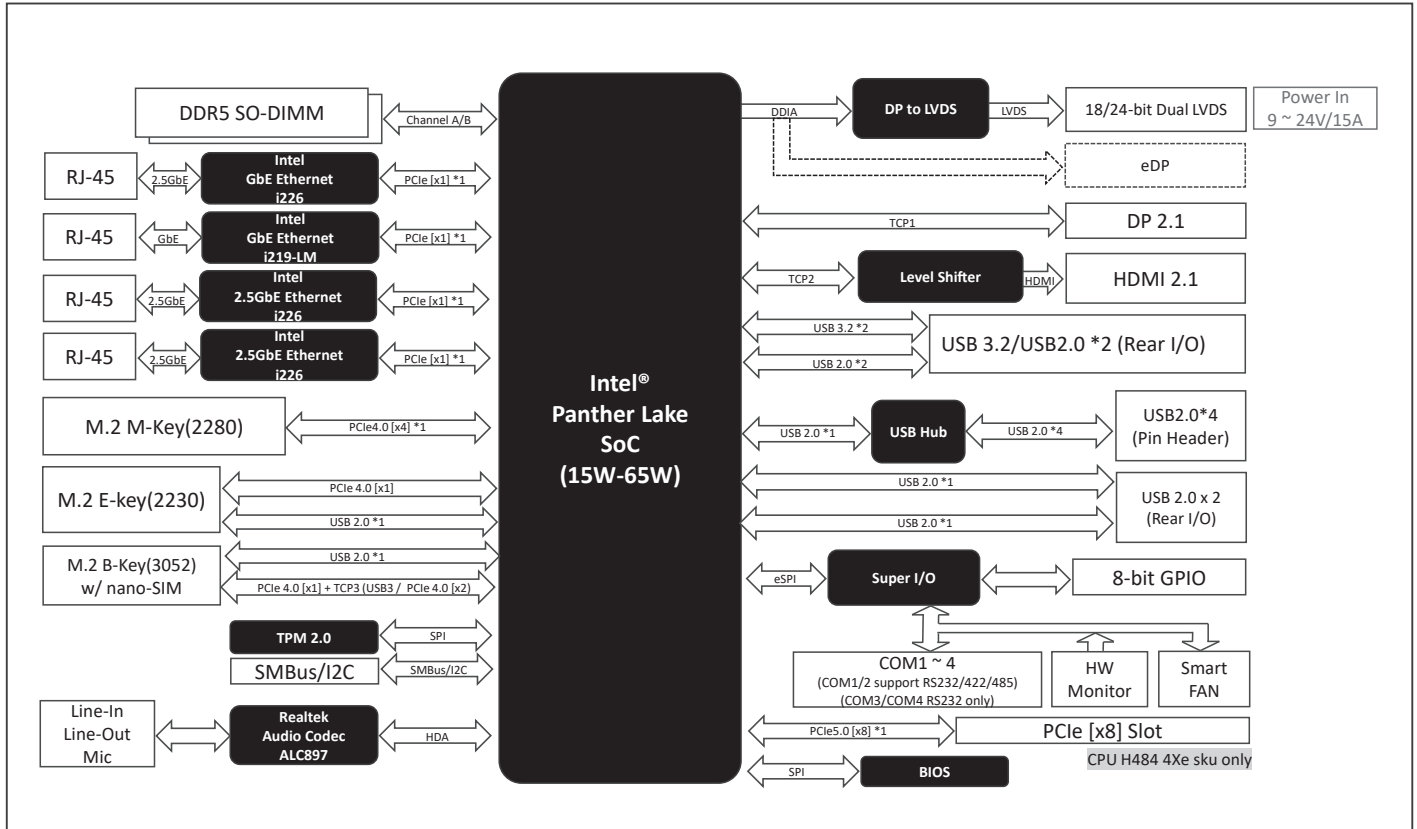
Optional Accessories

| Part Number | Description | QTY |
|-----------------|----------------------|-----|
| EPIC-PTH9-FAN01 | Cooler, 78*78*30.8mm | 1 |
| 1701090150 | COM Port Cable, 15cm | 4 |
| 1700050207 | USB 2.0 Cable, 20cm | 4 |
| 170X000156 | Audio Cable, 25cm | 1 |



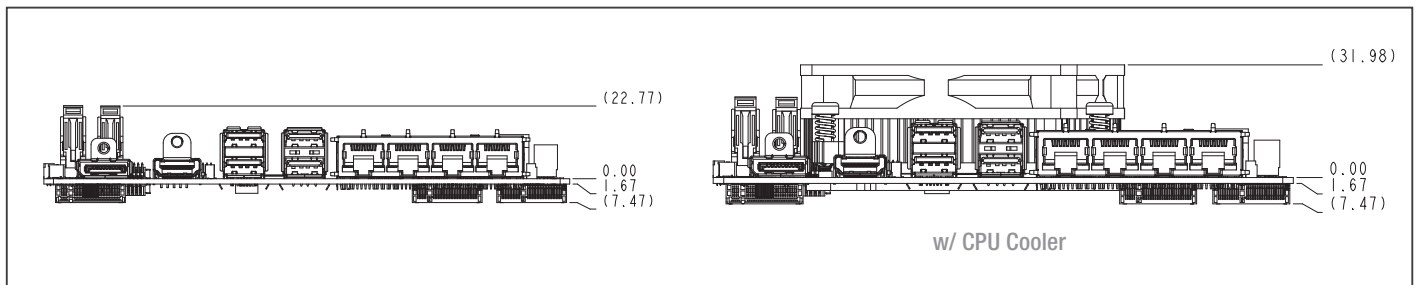


Block Diagram



Dimension

Unit: mm



Ordering Information

| PART NUMBER | CPU | Memory | Display | Storage | LAN | USB | COM | Expansion | TPM | Power | Operating Temperature | Others |
|--------------------|--------------------------------------|---------------------------|---------------------------|---------|---------------------|--------------------------------|--|--|---------|--------------------|-----------------------|--|
| EPIC-PTH9-A10-0001 | Intel® Core™ Ultra X7 Processor 358H | DDR5 SODIMM x 2 (Non ECC) | HDMI x 1, DP x 1 LVDS x 1 | — | 2.5GbE x 3, GbE x 1 | USB 3.2 Gen 2 x 2, USB 2.0 x 6 | COM RS-232/422/485 x 2 COM RS-232 x 2 | M.2 3052 B-Key x 1 M.2 2280 M-Key x 1 M.2 2230 E-Key x 1 | TPM 2.0 | DC +9Vin to +24Vin | -20°C – 70°C | GPIO 8-bit, Nano SIM x 1 Audio, SMBus |
| EPIC-PTH9-A10-0002 | Intel® Core™ Ultra 7 Processor 356H | DDR5 SODIMM x 2 (Non ECC) | HDMI x 1, DP x 1 LVDS x 1 | — | 2.5GbE x 3, GbE x 1 | USB 3.2 Gen 2 x 2, USB 2.0 x 6 | COM RS-232/422/485 x 2 COM RS-232 x 2 | M.2 3052 B-Key x 1 M.2 2280 M-Key x 1 M.2 2230 E-Key x 1 PCIe 5.0 [x8] Slot x 1 | TPM 2.0 | DC +9Vin to +24Vin | -20°C – 70°C | GPIO 8-bit, Nano SIM x 1 Audio, SMBus |

