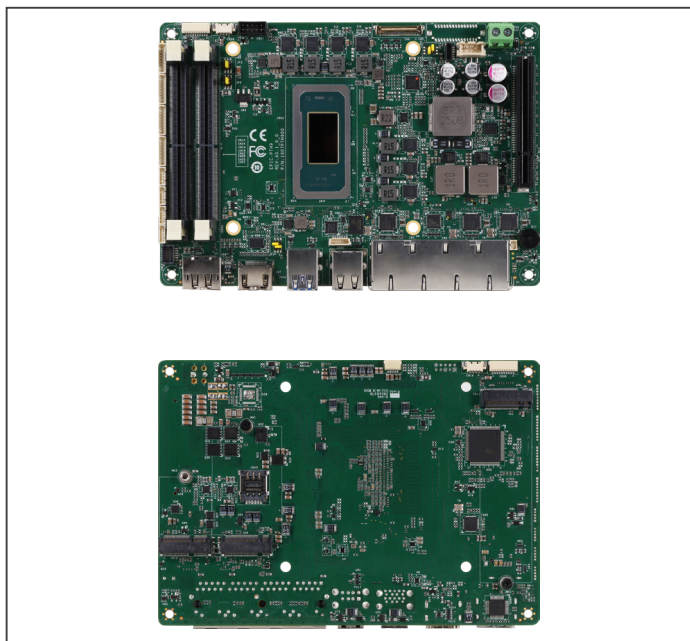


EPIC-PTH9 PRELIMINARY

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



Specifications

System	
Form Factor	4" EPIC Board
CPU	Intel® Core™ Ultra Series 3 processors, TDP 25W (Config. Max. TDP 65W) Intel® Core™ Ultra X9 Processor 388H, 16C/16T, up to 5.1 GHz (25W) Intel® Core™ Ultra 9 Processor 386H, 16C/16T, up to 4.9 GHz (25W) 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	Dual-Channel DDR5 6400 SODIMM x 2, up to 128GB (IB ECC support)
BIOS	UEFI
Wake On Lan	Yes
Watchdog Timer	255 Levels
Security	TPM 2.0 (Optional)
RTC Battery	Lithium Battery 3V/240mAh
Dimension	4.53" x 6.50" (115mm x 165mm)
OS Support	Windows 11 (64-bit) Ubuntu 24.04
Power	
Power Requirement	DC 9Vin - 24Vin
Power Supply Type	AT/ATX (Default: AT mode)
Connector	4-pin ATX Connector or 2-pin Phoenix Connector (Default)
Power Consumption	TBD
Display	
Controller	Integrated Intel® Arc™ GPU (4Xe/12Xe), dependent on CPU SKU
LVDS/eDP	Dual-Channel 18-bit/24-bit LVDS, up to 1920 x 1080 @60Hz, or eDP 1.4 x 1, up to 3840 x 2160 @60Hz (Optional)
Display Interface	HDMI 2.1 x 1, up to 3840 x 2160@60Hz DP 2.1 x 1, up to 3840 x 2160
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 Controller I226, 2.5GbE RJ-45 x 3 (Optional: 2.5GbE RJ-45 x 1) Intel® Ethernet Connection I219, GbE RJ-45 x 1
USB	USB 3.2 Gen 2 x 2 USB 2.0 x 2
Serial Port	—
Video	HDMI 2.1 x 1, up to 3840 x 2160 @60Hz DP 2.1 x 1, up to 3840 x 2160

Features

- Intel® Core™ Ultra Series 3 processors, up to 65W
- Intel Graphic Engine 4Xe/12Xe, up to 180 TOPs
- DDR5 SODIMM 6400 x 2, up to 128GB (Support In Band-ECC)
- 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 4.0 [x8] Slot x 1
- COM x 4, GPIO 8-bit, TPM 2.0, DC 9Vin - 24Vin

Internal I/O	
USB	USB 2.0 x 4 (Optional)
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	Dual-Channel 18-bit/24-bit LVDS, up to 1920 x 1080 @60Hz, or eDP 1.4 x 1, up to 3840 x 2160 @60Hz (Optional)
SATA	—
Audio	Line in / Line Out / Mic
DIO/GPIO	GPIO 8-bit
SMBus/I2C	SMBus / I2C (Default: SMBus)
Touch	—
Fan	4-pin Smart Fan x 2
SIM	Nano SIM x 1
Front Panel	Power Button, Reset Button, Power LED, SATA LED, Buzzer
Others	—
Expansion	
Mini PCI-E/mSATA	—
M.2	M.2 3052 B-Key x 1 (PCIe 4.0 [x2]/USB 3.0 + USB 2.0) 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) PCIe 4.0 [x8] Slot x 1 (supported on H484 4Xe CPU SKUs only)
Others	—
Environment & Certification	
Operating Temperature	32°F – 140°F (0°C – 60°C)
Storage Temperature	-40°F – 185°F (-40°C – 85°C)
Operating Humidity	0% – 90% relative humidity, non-condensing
MTBF (Hours)	TBD
EMC	CE/FCC Class A

Packing List

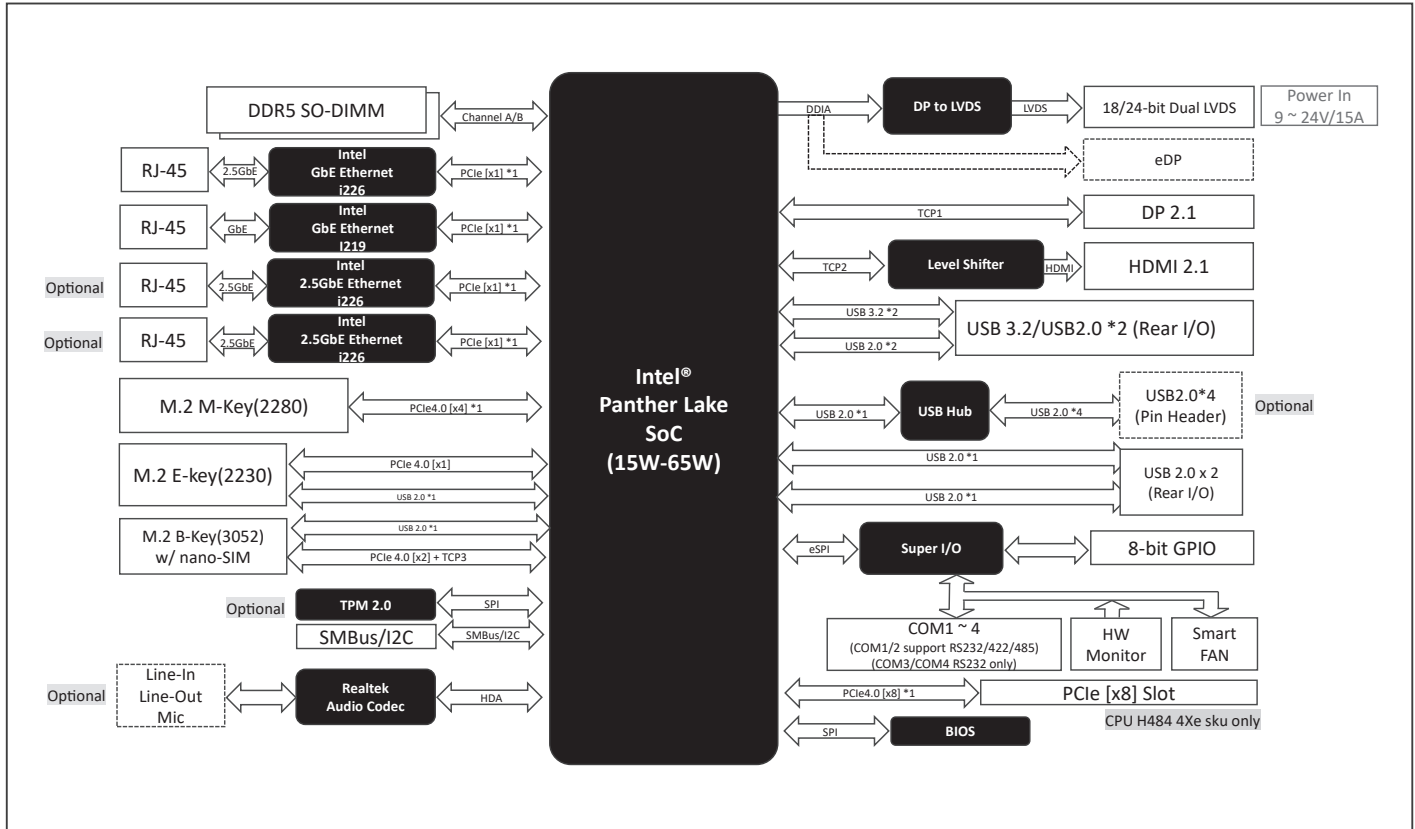
- EPIC-PTH9 x 1
- Screw kit x 1

Optional Accessories

- EPIC-PTH9-FAN01



Block Diagram



Dimension

Unit: mm



Ordering Information

PART NUMBER	CPU	Memory	Display	Storage	LAN	USB	COM	Expansion	TPM	Power	Operating Temperature	Others
EPIC-PTH9 (Sku1)	Intel® Core™ Ultra X9 Processor 388H	DDR5 SODIMM x 2	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	0°C – 60°C	GPIO 8-bit, Nano SIM x 1 Audio, SMBus
EPIC-PTH9 (Sku2)	Intel® Core™ Ultra 9 Processor 386H	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 4.0 [x8] Slot x 1	TPM 2.0	DC +9Vin to +24Vin	0°C – 60°C	GPIO 8-bit, Nano SIM x 1 Audio, SMBus
EPIC-PTH9 (Sku3)	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	0°C – 60°C	GPIO 8-bit, Nano SIM x 1 Audio, SMBus
EPIC-PTH9 (Sku4)	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 4.0 [x8] Slot x 1	TPM 2.0	DC +9Vin to +24Vin	0°C – 60°C	GPIO 8-bit, Nano SIM x 1 Audio, SMBus