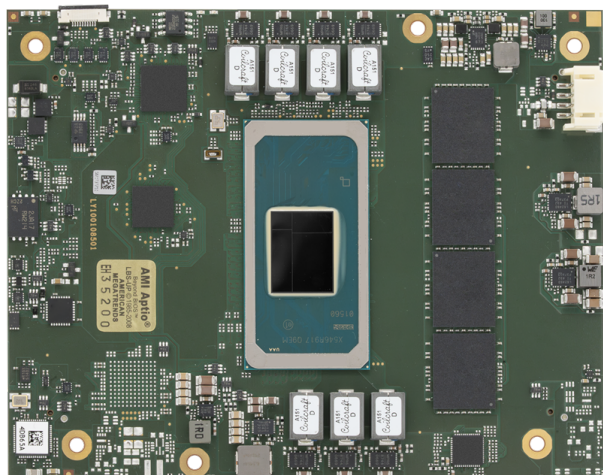


TRIA HCA-PLH

Intel® Core™ Ultra Processors Series 3

120 x 95



⚡ tbd

🌡️ -40 +85

COM+HPC®



Highlights

- COM-HPC Client, Size A module
- Intel® Core™ Ultra Processors Series 3
- Up to sixteen cores
- Industrial grading options (Intel® TCC, TSN, IB-ECC, ext. Temp., 24/7)
- Integrated AI accelerator (NPU)
- Up to 96GB LPDDR5x SDRAM, IB-ECC
- Intel Xe graphics, up to 12 Xe cores
- Three DisplayPort/HDMI interfaces
- Embedded DisplayPort interface
- Four independent display streams
- Up to twelve PCI Express® Gen 5 lanes and up to six PCI Express® Gen 4 lanes
- One USB4, two USB 3.2 Gen1/2 and eight USB 2.0 ports
- Two UARTs
- Up to two SATA 6Gb/s mass storage interfaces
- Two 1 Gb / 2.5 Gb Ethernet ports (Intel® i226)
- Trusted Platform Module TPM 2.0
- Long-term product availability

Technical Data

Technology	x86
Formfactor	COM-HPC Size A
CPU	Intel® Core™ Ultra Processors Series 3: Intel® Core™ Ultra X9 processor 388H 16 Cores, 2.1 GHZ, 12Xe, vPRO®, 25W BP, 12 PCIe Intel® Core™ Ultra X9 processor 378H 16 Cores, 2.1 GHZ, 12Xe, 25W BP, 12 PCIe Intel® Core™ Ultra 9 processor 386H 16 Cores, 2.1 GHZ, 4Xe, vPRO®, 25W BP, 20 PCIe Intel® Core™ Ultra X7 processor 368H 16 Cores, 2.0 GHZ, 12Xe, vPRO®, 25W BP, 12 PCIe Intel® Core™ Ultra 7 processor 366H 16 Cores, 2.0 GHZ, 4Xe, vPRO®, 25W BP, 20 PCIe Intel® Core™ Ultra 7 processor 365 8 Cores, 2.4 GHZ, 4Xe, vPRO®, 25W BP, 12 PCIe Intel® Core™ Ultra X7 processor 358H 16 Cores, 1.9 GHZ, 12Xe, 25W BP, 12 PCIe Intel® Core™ Ultra 7 processor 356H 16 Cores, 1.9 GHZ, 4Xe, 25W BP, 20 PCIe Intel® Core™ Ultra 7 processor 355 8 Cores, 2.3 GHZ, 4Xe, 25W BP, 12 PCIe Intel® Core™ Ultra 5 processor 338H 12 Cores, 1.9 GHZ, 10Xe, vPRO®, 25W BP, 12 PCIe Intel® Core™ Ultra 5 processor 336H 12 Cores, 1.9 GHZ, 4Xe, vPRO®, 25W BP, 20 PCIe Intel® Core™ Ultra 5 processor 335 8 Cores, 2.2 GHZ, 4Xe, vPRO®, 25W BP, 12 PCIe Intel® Core™ Ultra 5 processor 325 8 Cores, 2.1 GHZ, 4Xe, 25W BP, 12 PCIe Intel® Core™ Ultra 5 processor 332 6 Cores, 2.5 GHZ, 2Xe, vPRO®, 25W BP, 12 PCIe Intel® Core™ Ultra 5 processor 322 6 Cores, 2.5 GHZ, 2Xe, 25W BP, 12 PCIe Intel® Core™ Ultra X7 processor 358HR 16 Cores, x.x GHZ, 12Xe, vPRO®, 25W BP, 12 PCIe Intel® Core™ Ultra 7 processor 366HRE 16 Cores, x.x GHZ, 4Xe, vPRO®, 25W BP, 20 PCIe, ext. T. Intel® Core™ Ultra 7 processor 365RE 8 Cores, x.x GHZ, 4Xe, vPRO®, 25W BP, 20 PCIe, ext. T. Intel® Core™ Ultra 5 processor 336HRE 12 Cores, x.x GHZ, 4Xe, vPRO®, 25W BP, 20 PCIe, ext. T. Intel® Core™ Ultra 5 processor 335RE 8 Cores, x.x GHZ, 4Xe, vPRO®, 25W BP, 20 PCIe, ext. T. Note: P core base frequency at processor base power (25W BP) shown, other clock frequencies at different power levels supported
Chipset	Integrated into SoC
RAM	LPDDR5x memory, up to 9600 MT/s; memory-down Capacity options: 16GB, 32GB, 64GB, 96GB Inband ECC (IB-ECC) option (OS dependent)
Storage Interfaces	2x SATA channels (up to 6Gb/s), optional
USB	1x USB4 on COM-HPC USB0_SSTX/RX 2x USB 3.2 (Gen 1 & 2) on COM-HPC USB[1:2]_SSTX/RX 8x USB 2.0 on COM-HPC USB[0:7]
Serial Interfaces	2x high-speed serial ports
Bus Interfaces	PCI Express® Graphics Gen 5, 1x8 or 2x4 lanes on COM-HPC PCIe[16:23], optional¹ PCI Express® Gen 5, 1x4 on COM-HPC PCIe[8:11] PCI Express® Gen 4, 6 lanes, flexible bifurcation options on COM-HPC PCIe[0:5] PCI Express® Gen 3, 2 lanes, COM-HPC PCIe[6:7], optional ¹ Available on selected processor variants
Display Controller	Intel Xe graphics, up to 12 Xe cores H.264/AVC, H.265/HEVC, AV1, MJPEG encode/decode/transcode
Display Interfaces	Four independent display streams 1x USB4/USB-C ports (DP tunneling) 3x Digital Display Interface (DP 2.1, HDMI 2.1) 1x Embedded DisplayPort 1.5
Network Interface	Two 10/100/1000Base-TX, 2.5G² based on Intel i226, TSN support ² Available bandwidths depending on carrier design I-Temp variants: Intel® i226-IT C-Temp variants: Intel® i226-LM
Audio Interface	High Definition Audio
Security Device	TPM 2.0

Miscellaneous	Watchdog Timer: Initiates system reset, programmable Fan Supply: 4-pin header for CPU fan, PWM speed controlled and PWM speed control for system fan supported RTC battery: external System Monitoring: voltage, temperature, CPU fan, system fan
Feature Highlights	COM-HPC Client
Firmware	UEFI Firmware: AMI Aptio® V Security: TPM 2.0 support, TCG compliant Power Management: ACPI Active fan control USB: USB legacy support (keyboard, mouse, storage) Monitoring: System Monitoring Health Monitoring Tria Adv. Boot Device Selection: Boot device priority setting based on physical interfaces
OS Support	Windows 11 IoT Enterprise LTSC BSP for Linux (Yocto)
Power Requirement	Voltage: +8V to +20V, +5V Stby optional, +3V RTC voltage Power Consumption: tbd W to tbd W (typ., variant dependent)
Environment	Ambient Temperature: 0° ... 60°C (operating) -25° ... 85°C (storage) Extended temp. variants: -40 ... +85°C (operating) Humidity: 5 ... 95% (operating, non-condensing), 5 ... 95% (storage, non-condensing)
Dimensions	120 x 95

Technical Data for TRIA HCA-PLH

Order Reference

Order No.	Description	Reference	Status*
tbd	COM-HPC Client Size A module (120mm x 95mm); CPU: Intel Core Ultra 9 386H 16C, vPro, 25W BP; Graphics: Intel 4Xe; 3x DP/HDMI; 1x eDP; Ethernet: 2x Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 1x USB4, 2x USB3, 8x USB2, PCIe G5 8+4, G4 4+2, G3 1; 32GB LPDDR5X memory; 0...+60°C.	MSC HCA-PLH-386H 5N0150C PCBFTX	OR
tbd	COM-HPC Client Size A module (120mm x 95mm); CPU: Intel Core Ultra 7 356H 16C, 25W BP; Graphics: Intel 4Xe; 3x DP/HDMI; 1x eDP; Ethernet: 2x Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 1x USB4, 2x USB3, 8x USB2, PCIe G5 8+4, G4 4+2, G3 1; 16GB LPDDR5X memory; 0...+60°C.	MSC HCA-PLH-356H 4N0150C PCBFTX	OR
tbd	COM-HPC Client Size A module (120mm x 95mm); CPU: Intel Core Ultra 5 336H 12C, vPro, 25W BP; Graphics: Intel 4Xe; 3x DP/HDMI; 1x eDP; Ethernet: 2x Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 1x USB4, 2x USB3, 8x USB2, PCIe G5 8+4, G4 4+2, G3 1; 16GB LPDDR5X memory; 0...+60°C.	MSC HCA-PLH-336H 4N0150C PCBFTX	OR

Ordering Information for TRIA HCA-PLH

*PV = Preferred variant; OR = on Request (in OEM quantities only)

Accessories

Carrier Options

Order No.	Description	Reference
114609	COM-HPC Client Carrier Board with 1x PEG x16, 1x PCIe x16, 3x PCIe x4 slots; 2x USB 4 Gen 2x2, 2x USB 3.2 Gen 2x1, 2x 1G/2.5G/10GBASE-T, 2x SATA; 3x DisplayPort, 1x eDP; audio module socket; 1x M.2 socket; 24pin ATX and ATX12V power connectors; Dimensions: 305mm x 244mm (ATX form factor);	MSC HC-MB-EV BRDFTX

Carrier Options for TRIA HCA-PLH/MLH/RLP/ALP

Cooling Options

Order No.	Description	Reference
tbd	Passive Heatsink for HCA-PLH consisting of a singlepiece aluminum profile with fins, standoffs without thread (2.7mm inner diameter), screws and thermopads for the thermal contact to CPU, chipset, memory.	MSC HCA-PLH-01 HSI-001
tbd	Heatspreader for HCA-PLH. Single-piece aluminum profile, standoffs without thread (2.7mm inner diameter), screws and thermopads for the thermal contact to CPU, chipset, memory.	MSC HCA-PLH-01 HSP-001
tbd	Heatspreader / heat pipe for HCA-PLH. Singlepiece aluminum profile with embedded heat pipe, standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to CPU, chipset, memory.	MSC HCA-PLH-01 HSP-HP-001
tbd	Passive heatsink / heat pipe for HCA-PLH consisting of a single-piece aluminum profile with fins (rotated orientation) and embedded heatpipe, standoffs without thread (2.7mm inner diameter), screws and thermopads for the thermal contact to CPU, chipset, memory.	MSC HCA-PLH-02 HSI- HP-001
tbd	Heatspreader for HCA-PLH. Single-piece aluminum profile, standoffs with M2.5 thread, screws and thermopads for the thermal contact to CPU, chipset, memory.	MSC HCA-PLH-02 HSP-001

Cooling Options for TRIA HCA-PLH

Order No.	Description	Reference
79809	Fan kit for Heatsink MSC HCA-ALP/RLP/MLH/PLH-0x HSI-xxx, MSC C6B-TLH/ALP/RLP/MLH-0x HSI-xxx, MSC C6C-WLU/TLU/ALP/RLP/PLH-0x HSI-xxx, MSC C6C-EL/ALN/ASL-0x HSI-xxx, MSC C6C-RYZx-0x HSI-xxx, PWM fan 80x80x15mm.	MSC C6C- FANKIT-01- HSF-001

Fan Kit for COM-HPC Heatsinks

Tria Technologies GmbH
Industriestr. 16
76297 Stutensee
info@tria-technologies.com
tria-technologies.com

Copyright © 2024 Tria Technologies GmbH. All data is for information purposes only and is subject to change without notice. No guarantee for legal purposes is implied. Information in this document has been carefully checked, however, no responsibility for inaccuracies has to be assumed. All brand or product names may be trademarks and property of their respective owners.