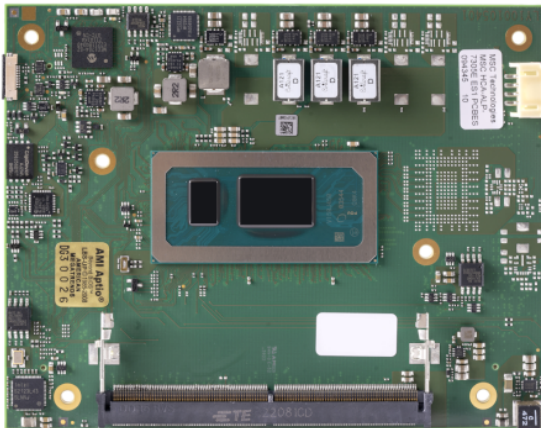


## TRIA HCA-ALP

Intel® Core™ 12th Generation

120 x 95



22 / 65 W

0 +60

COM+HPC®



## Highlights

- COM-HPC Client module, Size A
- 12th Gen Intel® Core™ processors
- Scalable CPU performance
- Up to fourteen cores, twenty threads
- Up to 64GB DDR5-4800 SDRAM, dual channel
- Intel® Iris® Xe architecture Graphics, up to 96 EUs
- Three DisplayPort/HDMI interfaces
- Embedded DisplayPort interface
- Up to four independent displays
- PCI Express® Gen 3, up to 8 lanes, PCI Express® Gen 4, up to 2x4
- PEG 1x8, PCIe Gen 4 (optional)
- Two USB4, two USB 3.2 Gen2, eight USB 2.0 ports
- Two UARTs
- Optional on-board NVMe SSD, up to 256GB
- Optional two SATA 6Gb/s mass storage interfaces
- Two 1 / 2.5 Gb Ethernet ports (Intel® i226)
- Trusted Platform Module TPM 2.0
- Long-term product availability

## Technical Data

<b>Technology</b>	x86
<b>Formfactor</b>	COM-HPC Size A
<b>CPU</b>	<p>12th Gen Intel® Core™ processors</p> <p>H-series                      Intel® Core™ i7-12800HE 6P+8E/20T, 2.4GHz, 96 EUs, 24MB L3, 45/35W cTDP                      Intel® Core™ i5-12600HE 4P+8E/16T, 2.5GHz, 80 EUs, 18MB L3, 45/35W cTDP                      Intel® Core™ i3-12300HE 4P+4E/12T, 1.9GHz, 48 EUs, 12MB L3, 45/35W cTDP</p> <p>P-series                      Intel® Core™ i7-1270PE 4P+8E/16T, 1.8GHz, 96 EUs, 24MB L3, 28/20W cTDP                      Intel® Core™ i5-1250PE 4P+8E/16T, 1.7GHz, 80 EUs, 12MB L3, 28/20W cTDP                      Intel® Core™ i3-1220PE 4P+4E/12T, 1.5GHz, 48 EUs, 12MB L3, 28/20W cTDP</p> <p>U-series                      Intel® Core™ i7-1265UE 2P+8E/12T, 1.7GHz, 96 EUs, 12MB L3, 15/12W cTDP                      Intel® Core™ i5-1245UE 2P+8E/12T, 1.5GHz, 80 EUs, 12MB L3, 15/12W cTDP                      Intel® Core™ i3-1215UE 2P+4E/8T, 1.2GHz, 64 EUs, 10MB L3, 15/12W cTDP                      Intel® Celeron® 7305E 1P+4E/5T, 1.0GHz, 48 EUs, 8MB L3, 15/12W cTDP</p> <p>Note: P core base frequency at nominal TDP shown, other clock frequencies supported</p>
<b>Chipset</b>	Integrated into SoC
<b>RAM</b>	2x 262-pin SO-DIMM socket for up to 2x 32GB DDR5 SDRAM (DDR5-4800); dual channel operation; minimum capacity 1x 8GB single channel operation
<b>Storage Interfaces</b>	2x SATA channels (up to 6Gb/s), optional optional on-board NVMe, 128GB, 256GB
<b>USB</b>	2x USB4 on COM-HPC USB[0:1]_SSTX/RX 2x USB 3.2 (Gen 1 & 2) on COM-HPC USB[2:3]_SSTX/RX 8x USB 2.0 on COM-HPC USB[0:7]
<b>Serial Interfaces</b>	2x high-speed serial ports
<b>Bus Interfaces</b>	PCI Express® Graphics (PEG) 1x8, PCIe Gen 4 on COM-HPC PCIe[16:23] <sup>1</sup> PCI Express® Gen 4, up to 2x4 on COM-HPC PCIe[8:15] PCI Express® Gen 3, up to 8 lanes, flexible bifurcation options on COM-HPC PCIe[0:7] <sup>1</sup> Available on H-series processors
<b>Display Controller</b>	Intel® Iris® Xe architecture Graphics, Up to 96 execution units (EU) H.264/AVC, H.265/HEVC, AV1, MJPEG encode/decode/transcode.
<b>Display Interfaces</b>	Four independent displays supported 3x Digital Display Interface (DP 1.4a, HDMI 2.0b) 1x Embedded DisplayPort 1.4b
<b>Network Interface</b>	Two 10/100/1000Base-TX, 2.5G <sup>2</sup> based on Intel i226-LM <sup>2</sup> Available bandwidths depending on carrier design
<b>Audio Interface</b>	High Definition Audio, optional Soundwire and I2S
<b>Security Device</b>	TPM 2.0
<b>Miscellaneous</b>	<p>Watchdog Timer: Initiates system reset, programmable</p> <p>Fan Supply: 4-pin header for CPU fan, PWM speed controlled and PWM speed control for system fan supported</p> <p>RTC battery: external</p> <p>System Monitoring: voltage, temperature, CPU fan, system fan</p>
<b>Feature Highlights</b>	COM-HPC Client, Size A

# COM-HPC Client



<b>Firmware</b>	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
<b>OS Support</b>	Windows 11 IoT Enterprise LTSC 2024 BSP for Linux (Yocto)
<b>Power Requirement</b>	Voltage: +8V to +20V, +5V Stby optional, +3V RTC voltage  Power Consumption: 22 W to 65 W (typ., variant dependent)
<b>Environment</b>	Ambient Temperature: 0° ... 60°C (operating) -25° ... 85°C (storage)  Humidity: 5 ... 95% (operating, non-condensing), 5 ... 95% (storage, non-condensing)
<b>Dimensions</b>	120 x 95

Technical Data for TRIA HCA-ALP

## Order Reference

Order No.	Description	Reference	Status*
113926	COM-HPC Client Size A module (120mm x 95mm); CPU: Intel i5-12600HE 12C/16T, vPro, 2.5GHz, 45/35W cTDP; Graphics: Intel® Iris® Xe 80 EUs; 3x DP/HDMI; 1x eDP; HD Audio; Ethernet: 2x Intel i226-LM Gbit, TSN; TPM 2.0; 2x USB4, 2x USB3, 8x USB2, 2x SATA, PEG x8 Gen 4, PCIe Gen 4 2x4, PCIe Gen 3 6x; 2x socket for DDR5; 0...+60°C.	MSC HCA-ALP-12600HE-NN0121C PCBFTX	OR
113924	COM-HPC Client Size A module (120mm x 95mm); CPU: Intel i3-12300HE 8C/12T, 1.9GHz, 45/35W cTDP; Graphics: Intel® UHD Graphics 48 EUs; 3x DP/HDMI; 1x eDP; HD Audio; Ethernet: 2x Intel i226-LM Gbit, TSN; TPM 2.0; 2x USB4, 2x USB3, 8x USB2, 2x SATA, PEG x8 Gen 4, PCIe Gen 2x4, PCIe Gen 3 6x; 2x socket for DDR5; 0...+60°C.	MSC HCA-ALP-12300HE-NN0121C PCBFTX	OR

Ordering Information for TRIA HCA-ALP

\*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-MLH/RLP/ALP

### Cooling Options

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

Fan Kit for COM-HPC Heatsinks

Order No.	Description	Reference
94875	Passive Heatsink for HCA-ALP/RLP 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, NVMe.	MSC HCA-ALP-01 HSI-001
94876	Passive Heatsink / heat pipe for HCA-ALP/RLP consisting of a single-piece aluminum profile with fins and embedded heatpipe, standoffs without thread (2.7mm inner diameter), screws and thermopads for the thermal contact to CPU, chipset, NVMe.	MSC HCA-ALP-01 HSI-HP-001
94877	Heatspreader for HCA-ALP/RLP. Single-piece aluminum profile, standoffs without thread (2.7mm inner diameter), screws and thermopads for the thermal contact to CPU, chipset, NVMe.	MSC HCA-ALP-01 HSP-001
94878	Heatspreader / heat pipe for HCA-ALP/RLP. Single-piece aluminum profile with embedded heat pipe, standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to CPU, chipset, NVMe.	MSC HCA-ALP-01 HSP-HP-001
112247	Passive heatsink / heat pipe for HCA-ALP/RLP 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, NVMe.	MSC HCA-ALP-02 HSI-HP-001
94879	Heatspreader for HCA-ALP/RLP. Single-piece aluminum profile, standoffs with M2.5 thread, screws and thermopads for the thermal contact to CPU, chipset, NVMe.	MSC HCA-ALP-02 HSP-001

Cooling Options for TRIA HCA-ALP/RLP

## Memory Options

Order No.	Description	Reference
115233	8GB DDR5-5600 SO-DIMM, commercial temperature	MOD SODIMM DDR5 8GB PC5-44800 CL22 1B
115234	16GB DDR5-5600 SO-DIMM, commercial temperature	MOD SODIMM DDR5 16GB PC5-44800 CL22 1B
115235	32GB DDR5-5600 SO-DIMM, commercial temperature	MOD SODIMM DDR5 32GB PC5-44800 CL22 2B

Memory Options for TRIA HCA-ALP (max. DDR5-4800 supported by processor)

# COM-HPC Client



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