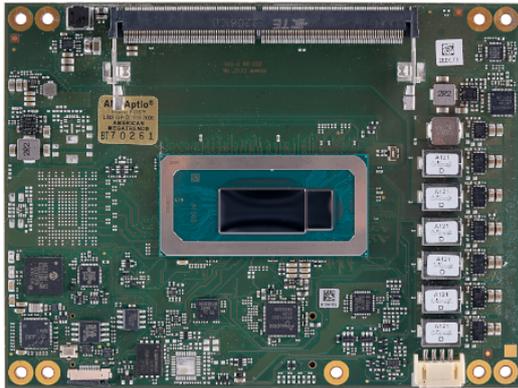# COM Express Type 6

TRIA C6B-ALP

Intel® Core™ 12th Generation

📏 125 x 95

⚡ tbd

🌡 0-+60°C

Highlights

- 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
- LVDS and Embedded DisplayPort interface
- Up to four independent displays
- PCI Express® 4×1 lanes, configurable up to x4, Gen 3, PCI Express® 1×4, Gen 4
- PEG 1×8, PCIe Gen 4 (optional)
- Four USB 3.2 Gen1/2 and eight USB 2.0 ports
- Two UARTs
- Optional on-board NVMe SSD, up to 256GB
- Two SATA 6Gb/s mass storage interfaces
- 1 / 2.5 Gb Ethernet port (Intel® i226)
- Trusted Platform Module TPM 2.0

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- Long-term product availability

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Technical Data

Technology	x86
Formfactor	COM Express Basic
CPU	12th Gen Intel® Core™ processors 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-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 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 Note: P core base frequency at nominal TDP shown, other clock frequencies supported
Chipset	Integrated into SoC
RAM	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
Storage Interfaces	2x SATA channels (up to 6Gb/s) Optional on-board NVMe, 128GB, 256GB
USB	4x USB 3.2 (Gen 1 & 2), 8x USB 2.0
Serial Interfaces	2x high-speed serial ports
Bus Interfaces	PCI Express® Graphics (PEG) Gen 4, 1x8, on COMe PEG[0:7][1] PCI Express® Gen 4, 1x4, on COMe PCIe[4:7] PCI Express® Gen 3, 1x4, flexible bifurcation options, on COMe PCIe[0:3] LPC bus (Low Pin Count bus, no DMA support) [1] Available on H-series processors
Display Controller	Intel® Iris® Xe architecture Graphics, Up to 96 execution units (EU) H.264/AVC, H.265/HEVC, AV1, MJPEG encode/decode/transcode.
Display Interfaces	Four independent displays supported 3x Digital Display Interface (DP 1.4a, HDMI 2.0b) 1x Embedded DisplayPort 1.4b 1x LVDS 24bit, dual-channel;
Network Interface	10/100/1000Base-TX, 2.5G[2] based on Intel i226-LM [2] Available bandwidths depending on carrier design
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	Type 6 pin-out

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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 2024 BSP for Linux (Yocto)
Power Requirement	Voltage: +8.5V to +20V, +5V Stby optional Power Consumption: tbd W to tbd W (typ.)
Environment	Ambient Temperature: 0° ... 60°C (operating) -25° ... 85°C (storage) Humidity: 5 ... 95% (operating, non-condensing), 5 ... 95% (storage, non-condensing)
Dimensions	125 x 95
Certificates	UL / CE

Technical Data for TRIA C6B-ALP

COM Express Type 6

Order Reference

Order No.	Description	Reference	Status *
98864	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel i7-12800HE 14C/20T, 2.4GHz, 45/35W cTDP; Graphics: Intel® Iris® Xe 96 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 4x USB3, 8x USB2, PEG x8 Gen 4, PCIe Gen 4 1x4, PCIe Gen 3 4x1; 2x socket for DDR5; 0…+60°C.	MSC C6B-ALP-12800HE-NN0301C PCBFTX	OR
98858	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel i5-12600HE 12C/16T, 2.5GHz, 45/35W cTDP; Graphics: Intel® Iris® Xe 80 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 4x USB3, 8x USB2, PEG x8 Gen 4, PCIe Gen 4 1x4, PCIe Gen 3 4x1; 2x socket for DDR5; 0…+60°C.	MSC C6B-ALP-12600HE-NN0301C PCBFTX	PV
98852	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel i3-12300HE 8C/12T, 1.9GHz, 45/35W cTDP; Graphics: Intel® UHD Graphics 48 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 4x USB3, 8x USB2, PEG x8 Gen 4, PCIe Gen 1x4, PCIe Gen 3 4x1; 2x socket for DDR5; 0…+60°C.	MSC C6B-ALP-12300HE-NN0301C PCBFTX	PV
98862	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel i7-1270PE 12C/16T, 1.8GHz, 28/20W cTDP; Graphics: Intel® Iris® Xe 96 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 4 1x4, PCIe Gen 3 4x1; 2x socket for DDR5; 0…+60°C.	MSC C6B-ALP-1270PE-NN0301C PCBFTX	OR
98856	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel i5-1250PE 12C/16T, 1.7GHz, 28/20W cTDP; Graphics: Intel® Iris® Xe 80 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 4 1x4, PCIe Gen 3 4x1; 2x socket for DDR5; 0…+60°C.	MSC C6B-ALP-1250PE-NN0301C PCBFTX	PV
98840	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel i3-1220PE 8C/12T, 1.5GHz, 28/20W cTDP; Graphics: Intel® UHD Graphics 48 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 4 1x4, PCIe Gen 3 4x1; 2x socket for DDR5; 0…+60°C.	MSC C6B-ALP-1220PE-NN0301C PCBFTX	PV

COM Express Type 6

Order No.	Description	Reference	Status *
98860	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel i7-1265UE 10C/12T, 1.7GHz, 15/12W cTDP; Graphics: Intel® Iris® Xe 96 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 4 1x4, PCIe Gen 3 4x1; 2x socket for DDR5; 0...+60°C.	MSC C6B-ALP-1265UE-NN0301C PCBFTX	PV
98854	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel i5-1245UE 10C/12T, 1.5GHz, 15/12W cTDP; Graphics: Intel® Iris® Xe 80 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 4 1x4, PCIe Gen 3 4x1; 2x socket for DDR5; 0...+60°C.	MSC C6B-ALP-1245UE-NN0301C PCBFTX	PV
110528	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel i3-1215UE 6C/8T, 1.2GHz, 15/12W cTDP; Graphics: Intel® UHD Graphics 64 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 4 1x4, PCIe Gen 3 4x1; 2x socket for DDR5; 0...+60°C.	MSC C6B-ALP-1215UE-NN0301C PCBFTX	PV
98866	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Celeron 7305E 5C/5T, 1.0GHz, 15/12W cTDP; Graphics: Intel® UHD Graphics 48 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 4 1x4, PCIe Gen 3 4x1; 2x socket for DDR5; 0...+60°C.	MSC C6B-ALP-7305E-NN0301C PCBFTX	PV

Ordering Information for TRIA C6B-ALP

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

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Accessories

Cooling Solutions

Order No.	Description	Reference
92019	Passive Heatsink for C6B-ALP and C6B-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 C6B-ALP-01 HSI-001
92020	Passive Heatsink / heat pipe for C6B-ALP and C6B-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 C6B-ALP-01 HSI-HP-001
92021	Heatspreader for C6B-ALP and C6B-RLP. Single-piece aluminum profile, standoffs without thread (2.7mm inner diameter), screws and thermopads for the thermal contact to CPU, chipset, NVMe.	MSC C6B-ALP-01 HSP-001
92032	Heatspreader / heat pipe for C6B-ALP and C6B-RLP. Singlepiece 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 C6B-ALP-01 HSP-HP-001
92033	Heatspreader for C6B-ALP and C6B-RLP. Single-piece aluminum profile, standoffs with M2.5 thread, screws and thermopads for the thermal contact to CPU, chipset, NVMe.	MSC C6B-ALP-02 HSP-001

Cooling Devices for TRIA C6B-RLP/ALP

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 Express Heatsinks

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 C6B-ALP (max. DDR5-4800 supported by processor)

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