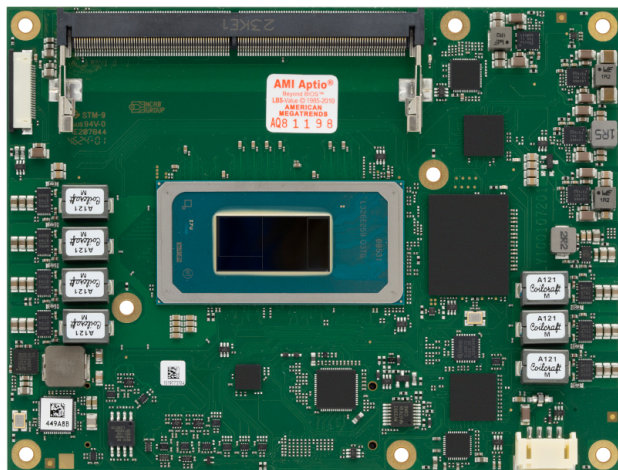


TRIA C6B-MLH

Intel® Core™ Ultra Processors



125 x 95

tbd

0 - +60°C

COM
Express



Highlights

- COM Express Type 6, Basic module
- Intel® Core™ Ultra Processors Series 1 and 2
- Up to sixteen cores, twenty-two threads
- Integrated AI accelerator (NPU) Intel® AI Boost
- Up to 96GB DDR5-6400 SDRAM, dual channel, IB-ECC
- Intel® Arc™ Graphics, up to 8 Xe cores (128 EUs)
- Three DisplayPort/HDMI interfaces
- LVDS and Embedded DisplayPort interface
- Four independent display streams
- Up to sixteen PCI Express® Gen 4 lanes
- PEG 1x8, PCIe Gen 4 (optional)
- Up to two USB4 ports, three USB 3.2 Gen1/2 and eight USB 2.0 ports
- Two UARTs
- Optional on-board NVMe SSD, up to 256GB
- Up to two SATA 6Gb/s mass storage interfaces
- 1 / 2.5 Gb Ethernet port (Intel® i226)
- Trusted Platform Module TPM 2.0
- Long-term product availability for selected variants 125 x 95 tbd 0 +60

Technical Data

Technology	x86
Formfactor	COM Express Basic
CPU	Intel® Core™ Ultra Processors Series 2: Intel® Core™ Ultra 9 processor 285H 6P+8E+2LPE/22T, 2.9GHZ, 8Xe/128EUs, 24MB L3, vPRO®, 45W BP Intel® Core™ Ultra 7 processor 265H 6P+8E+2LPE/22T, 2.2GHZ, 8Xe/128EUs, 24MB L3, vPRO®, 28W BP Intel® Core™ Ultra 7 processor 255H 6P+8E+2LPE/22T, 2.0GHZ, 8Xe/128EUs, 24MB L3, 28W BP Intel® Core™ Ultra 5 processor 235H 4P+8E+2LPE/18T, 2.4GHZ, 8Xe/128EUs, 18MB L3, vPRO®, 28W BP Intel® Core™ Ultra 5 processor 225H 4P+8E+2LPE/18T, 1.7GHZ, 7Xe/112EUs, 18MB L3, 28W BP Intel® Core™ Ultra 7 processor 265U 2P+8E+2LPE/14T, 2.1GHZ, 4Xe/64EUs, 12MB L3, vPRO®, 15W BP Intel® Core™ Ultra 7 processor 255U 2P+8E+2LPE/14T, 2.0GHZ, 4Xe/64EUs, 12MB L3, 15W BP Intel® Core™ Ultra 5 processor 235U 2P+8E+2LPE/14T, 2.0GHZ, 4Xe/64EUs, 12MB L3, vPRO®, 15W BP Intel® Core™ Ultra 5 processor 225U 2P+8E+2LPE/14T, 1.5GHZ, 4Xe/64EUs, 12MB L3, 15W BP Intel® Core™ Ultra Processors Series 1: Intel® Core™ Ultra 7 processor 165H 6P+8E+2LPE/22T, 1.4GHZ, 8Xe/128EUs, 24MB L3, vPRO®, 28W BP Intel® Core™ Ultra 7 processor 155H 6P+8E+2LPE/22T, 1.4GHZ, 8Xe/128EUs, 24MB L3, 28W BP Intel® Core™ Ultra 5 processor 135H 4P+8E+2LPE/18T, 1.7GHZ, 8Xe/128EUs, 18MB L3, vPRO®, 28W BP Intel® Core™ Ultra 5 processor 125H 4P+8E+2LPE/18T, 1.2GHZ, 7Xe/112EUs, 18MB L3, 28W BP Intel® Core™ Ultra 7 processor 165U 2P+8E+2LPE/14T, 1.7GHZ, 4Xe/64EUs, 12MB L3, vPRO®, 15W BP Intel® Core™ Ultra 7 processor 155U 2P+8E+2LPE/14T, 1.7GHZ, 4Xe/64EUs, 12MB L3, 15W BP Intel® Core™ Ultra 5 processor 135U 2P+8E+2LPE/14T, 1.6GHZ, 4Xe/64EUs, 12MB L3, vPRO®, 15W BP Intel® Core™ Ultra 5 processor 125U 2P+8E+2LPE/14T, 1.3GHZ, 4Xe/64EUs, 12MB L3, 15W BP Note: P core base frequency at processor base power (BP) shown, other clock frequencies at different power levels supported
Chipset	Integrated into SoC
RAM	2x 262-pin SO-DIMM socket for up to 2x 48GB DDR5 SDRAM DDR5-6400 Series 2 processors DDR5-5600 Series 1 processors Dual channel operation; minimum capacity 1x 8GB single channel operation inband ECC (IB-ECC) option (OS dependent)
Storage Interfaces	Up to 2x SATA channels (up to 6Gb/s) Optional on-board NVMe, 128GB, 256GB
USB	Up to 2x USB4 (mutually exclusive with DDI 1, 2) 3x USB 3.2 (Gen 1 & 2), 8x USB 2.0
Serial Interfaces	2x high-speed serial ports
Bus Interfaces	PCI Express® Gen 4, 1x8, on COMe PCIe[24:31], PEG port, optional ¹ PCI Express® Gen 4, 1x4, on COMe PCIe[20:23], optional PCI Express® Gen 4, 1x4, on COMe PCIe[16:19] Up to eight PCI Express® Gen 4 lanes on COMe PCIe[0:7], flexible bifurcation options, up to 5 root ports LPC bus (Low Pin Count bus, no DMA support) ¹ Available on H-series processors
Display Controller	Intel® Arc™ Graphics, up to 8 Xe cores / 128 execution units (EU) H.264/AVC, H.265/HEVC, AV1, MJPEG encode/decode/transcode
Display Interfaces	Four independent display streams 2x USB4/USB-C ports (DP tunneling) 3x Digital Display Interface (DP 2.1, HDMI 2.1) 1x Embedded DisplayPort 1.4b 1x LVDS 24bit, dual-channel
Network Interface	10/100/1000Base-TX, 2.5G² based on Intel i226-LM ² Available bandwidths depending on carrier design
Audio Interface	High Definition Audio
Security Device	TPM 2.0

COM Express Type 6



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
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: +8.5V to +20V, +5V Stby optional, +3V RTC voltage 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

Technical Data for TRIA C6B-MLH

Order Reference

Order No.	Description	Reference	Status*
tbd	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core Ultra 7 255H 16C/22T, 2.0GHz, 28W BP; Graphics: Intel Arc 128 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 3x USB3, 8x USB2, PEG x8 Gen 4, PCIe G4 2x4, PCIe G4 6x; 2x socket for DDR5; 0...+60°C.	MSC C6B-MLH-255H- NN301C PCBFTX	OR
tbd	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core Ultra 7 255U 12C/14T, 2.0GHz, 15W BP; Graphics: Intel 64 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 3x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 4 6x; 2x socket for DDR5; 0...+60°C.	MSC C6B-MLH-255U- NN301C PCBFTX	OR
tbd	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core Ultra 5 225U 12C/14T, 1.5GHz, 15W BP; Graphics: Intel 64 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 3x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 4 6x; 2x socket for DDR5; 0...+60°C.	MSC C6B-MLH-225U- NN301C PCBFTX	OR
121430	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core Ultra 7 155H 16C/22T, 1.4GHz, 28W BP; Graphics: Intel Arc 128 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 3x USB3, 8x USB2, PEG x8 Gen 4, PCIe G4 2x4, PCIe G4 6x; 2x socket for DDR5; 0...+60°C.	MSC C6B-MLH-155H- NN301C PCBFTX	PV
121426	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core Ultra 5 125H 14C/18T, 1.2GHz, 28W BP; Graphics: Intel Arc 112 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 3x USB3, 8x USB2, PEG x8 Gen 4, PCIe G4 2x4, PCIe G4 6x; 2x socket for DDR5; 0...+60°C.	MSC C6B-MLH-125H- NN301C PCBFTX	PV
121444	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core Ultra 7 165U 12C/14T, vPro 1.7GHz, 15W BP; Graphics: Intel 64 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 3x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 4 6x; 2x socket for DDR5; 0...+60°C.	MSC C6B-MLH-165U- NN301C PCBFTX	OR
121442	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core Ultra 7 155U 12C/14T, 1.7GHz, 15W BP; Graphics: Intel 64 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 3x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 4 6x; 2x socket for DDR5; 0...+60°C.	MSC C6B-MLH-155U- NN301C PCBFTX	PV
121428	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core Ultra 5 125U 12C/14T, 1.3GHz, 15W BP; Graphics: Intel 64 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA, 3x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 4 6x; 2x socket for DDR5; 0...+60°C.	MSC C6B-MLH-125U- NN301C PCBFTX	PV

Ordering Information for TRIA C6B-MLH

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

Accessories

Carrier Boards

Order No.	Description	Reference
111650	COM Express Type 6 Evaluation Carrier Board with various PCI Express x1, x4 and x16 slots, USB 3.0/2.0, GbE, M.2, SD card socket, SATA, DisplayPort, LVDS, eDP, VGA, HD audio interfaces; ATX power connector. Dimensions: 305 x 244 mm (ATX form factor)	MSC C6-MB-EV4 PCBFTX
119830	COM Express Type 6 Evaluation Carrier Board with PCI Express x4 and x16 slots, USB 3.0/2.0, USB4 Type-C, GbE, M.2, SATA, DisplayPort, LVDS, eDP; ATX power connector. Dimensions: 170 x 170 mm (Mini-ITX form factor)	MSC C6-MB-EV4M BRDFTX

Carrier Boards TRIA C6-MB-EV4/EV4M

Cooling Solutions

Order No.	Description	Reference
114058	Passive Heatsink for C6B-MLH 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-MLH-01 HSI-001
114175	Passive Heatsink / heat pipe for C6B-MLH 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-MLH-01 HSI-HP-001
114057	Heatspreader for C6B-MLH. Single-piece aluminum profile, standoffs without thread (2.7mm inner diameter), screws and thermopads for the thermal contact to CPU, chipset, NVMe.	MSC C6B-MLH-01 HSP-001
114176	Heatspreader / heat pipe for C6B-MLH. 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-MLH-01 HSP-HP-001
114177	Heatspreader for C6B-MLH. Single-piece aluminum profile, standoffs with M2.5 thread, screws and thermopads for the thermal contact to CPU, chipset, NVMe.	MSC C6B-MLH-02 HSP-001

Cooling Devices for TRIA C6B-MLH

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 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-MLH

COM Express Type 6



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