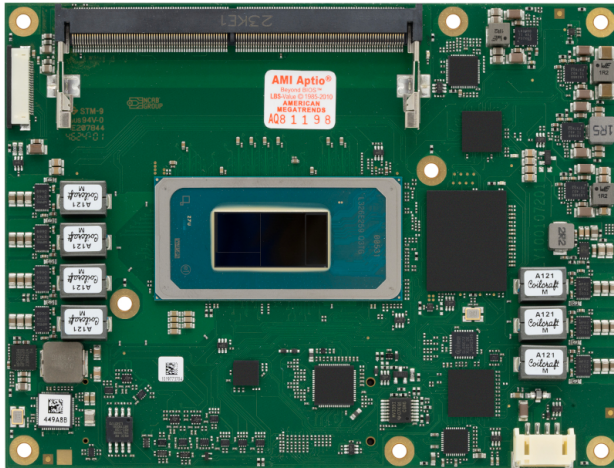


COM Express Type 6



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

COM Express Type 6



Order Reference

Order No.	Description	Reference	Status*
tbd	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core Ultra 7 265H 16C/22T, vPro 2.2GHz, 28W BP; Graphics: Intel Arc 128 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; 2x CSI; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 2x SATA; 3x USB3, 8x USB2, PEG x8 Gen 4, PCIe G4 1x4, PCIe G4 6x; 2x socket for DDR5; 0...+60°C.	MSC C6B-MLH-265H-NN3J1C PCBFTX	OR
tbd	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core Ultra 5 235H 14C/18T, vPro 2.4GHz, 28W BP; Graphics: Intel Arc 128 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; 2x CSI; 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-235H-NN3J1C PCBFTX	OR
tbd	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core Ultra 7 265U 12C/14T, vPro 2.1GHz, 15W BP; Graphics: Intel 64 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; 2x CSI; 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-265U-NN3J1C PCBFTX	OR
tbd	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core Ultra 5 235U 12C/14T, vPro 2.0GHz, 15W BP; Graphics: Intel 64 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; 2x CSI; 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-235U-NN3J1C PCBFTX	OR
tbd	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; 2x CSI; 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-NN3J1C PCBFTX	PV
tbd	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; 2x CSI; 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-NN3J1C PCBFTX	PV
tbd	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; 2x CSI; 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-NN3J1C PCBFTX	PV
tbd	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; 2x CSI; 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-NN3J1C PCBFTX	OR

COM Express Type 6



Order No.	Description	Reference	Status*
tbd	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; 2x CSI; 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-NN3J1C 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

Carrier Boards for TRIA C6B-xxx/C6C-xxx Products

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-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-MLH

COM Express Type 6



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.