COM Express Type 6

TRIA
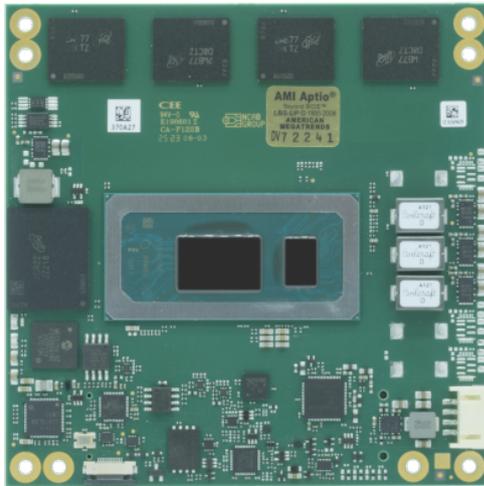AN AVNET COMPANY

TRIA C6C-ALP

Intel® Core™ 12th Generation

| 95 x 95

⚡ 22 / 49 W

🌡 0 - +60°C

COM Express   **intel.**

Highlights

- 12th Gen Intel® Core™ processors
- Scalable CPU performance
- Up to fourteen cores, twenty threads
- Up to 32GB LPDDR5-5200 main memory, memory-down
- Intel® Iris® Xe architecture Graphics, up to 96 EUs
- Three DisplayPort/HDMI interfaces
- LVDS and Embedded DisplayPort interface
- Up to four independent displays
- Up to eight PCI Express® Gen 3 lanes, flexible bifurcation options
- PCI Express® Gen 4, up to 2×4
- Optional PEG port, PCI Express® Gen 4, 1×8
- Up to two USB4, four 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® i225/226)
- Trusted Platform Module TPM 2.0
- Long-term product availability

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Technical Data

Technology	x86
Formfactor	COM Express Compact
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	Up to 32GB LPDDR5-5200 memory; memory-down; minimum capacity 4GB
Storage Interfaces	Up to 2x SATA channels (up to 6Gb/s) Optional on-board NVMe, 128GB, 256GB
USB	Up to 2x USB4 Gen 2, shared with DDI1/2 4x USB 3.2 (Gen 1 & 2) 8x USB 2.0 Note: capabilities depending on carrier design
Serial Interfaces	2x high-speed serial ports
Bus Interfaces	PCI Express® Gen 4, 1x4, on COMe PCIe[16:19] PCI Express® Gen 4, 1x4, on COMe PCIe[20:23], optional PCI Express® Gen 4, 1x8, on COMe PCIe[24:31], PEG port, optional [1] Up to eight PCI Express® Gen 3 lanes, 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® 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

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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 2024 BSP for Linux (Yocto)
Power Requirement	Voltage: +8.5V to +20V, +5V Stby optional Power Consumption: 22 W to 49 W (typ., variant dependent)
Environment	Ambient Temperature: 0° ... 60°C (operating) -25° ... 85°C (storage) Humidity: 5 ... 95% (operating, non-condensing), 5 ... 95% (storage, non-condensing)
Dimensions	95 x 95

Technical Data for TRIA C6C-ALP

COM Express Type 6

Order Reference

Order No.	Description	Reference	Status*
97985	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel i7-1270PE 14C/20T, 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; 4x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 3 8x; 16GB LPDDR5-5200 memory; 0...+60°C.	MSC C6C-ALP-1270PE-4N301C PCBFTX	OR
97981	COM Express Type 6 Compact module (95mm 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; 4x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 3 8x; 8GB LPDDR5-5200 memory; 0...+60°C.	MSC C6C-ALP-1250PE-3N301C PCBFTX	OR
97975	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel i3-1220PE 8C/12T, 1.5GHz, 28/20W cTDP; Graphics: Intel® UHD 48 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 4x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 3 8x; 8GB LPDDR5-5200 memory; 0...+60°C.	MSC C6C-ALP-1220PE-3N301C PCBFTX	OR
97983	COM Express Type 6 Compact module (95mm 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; 4x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 3 8x; 8GB LPDDR5-5200 memory; 0...+60°C.	MSC C6C-ALP-1265UE-3N301C PCBFTX	OR
97977	COM Express Type 6 Compact module (95mm 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; 4x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 3 8x; 8GB LPDDR5-5200 memory; 0...+60°C.	MSC C6C-ALP-1245UE-3N301C PCBFTX	OR
97973	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel i3-1215UE 6C/8T, 1.2GHz, 15/12W cTDP; Graphics: Intel® UHD 64 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i226-LM Gbit, TSN; HD audio; TPM 2.0; 4x USB3, 8x USB2, PCIe Gen 4 2x4, PCIe Gen 3 8x; 8GB LPDDR5-5200 memory; 0...+60°C.	MSC C6C-ALP-1215UE-3N301C PCBFTX	OR
97989	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron 7305E 5C/5T, 1.0GHz, 15/12W cTDP; Graphics: Intel® UHD 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 2x4, PCIe Gen 3 6x; 8GB LPDDR5-5200 memory; 0...+60°C.	MSC C6C-ALP-7305E-3N331C PCBFTX	OR

Ordering Information for TRIA C6C ALP

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

COM Express Type 6

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
96413	Passive Heatsink for C6C-ALP and C6C-RLP consisting of a single-piece aluminum profile with fins, standoffs without thread (2.7mm inner diameter), screws and thermopads for the thermal contact to major devices.	MSC C6C-ALP-01 HSI-001
96414	Passive Heatsink / heat pipe for C6C-ALP and C6C-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 major devices.	MSC C6C-ALP-01 HSI-HP-001
96415	Heatspreader for C6C-ALP and C6C-RLP. Single-piece aluminum profile, standoffs without thread (2.7mm inner diameter), screws and thermopads for the thermal contact to major devices.	MSC C6C-ALP-01 HSP-001
96416	Heatspreader / heat pipe for C6C-ALP and C6C-RLP. Single-piece aluminum profile with embedded heat pipe, standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to major devices.	MSC C6C-ALP-01 HSP-HP-001
96417	Heatspreader for C6C-ALP and C6C-RLP. Single-piece aluminum profile, standoffs with M2.5 thread, screws and thermopads for the thermal contact to major devices.	MSC C6C-ALP-02 HSP-001

Cooling Devices for TRIA C6C-ALP/RLP

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

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