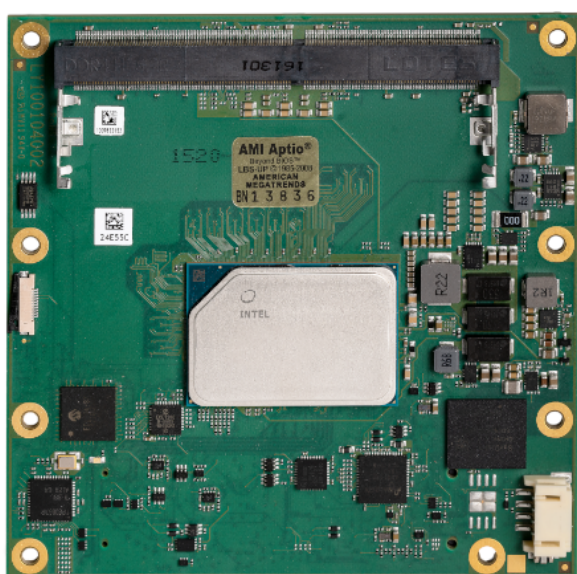


TRIA C6C-EL

Intel® Atom™ Series / Pentium® / Celeron® SOC



95 x 95

7 / 14W

-40-+85

COM 
Express



Highlights

- Scalable CPU performance
- Quad and dual core variants
- Power efficient processors, TDP 6 to 12W
- Extended temperature variants
- Integrated Intel Gen11LP graphics, max. 32 executing units
- Up to 32GB DDR4-3200 SDRAM, dual-channel, In-band ECC option
- Two SATA 6Gb/s mass storage interfaces
- eMMC mass storage option
- DisplayPort/HDMI interface
- LVDS/Embedded DisplayPort interface, three independent displays supported
- DirectX 12, OpenGL 4.5/ES 3.x, OpenCL 1.2 driver support
- Two USB 3.1 and eight USB 2.0 interfaces
- Two UARTs
- Up to eight PCI Express™ lanes
- One Gb Ethernet port
- TSN, TCC support
- UEFI Firmware
- Trusted Platform Module TPM 2.0

Technical Data

Technology	x86
Formfactor	COM Express Compact
CPU	Intel Atom® x6425RE Processor, quad-core / 4T, 1.9GHz, 32EU, IBECC, TCC 12W, IUC Intel Atom® x6416RE Processor, quad-core / 4T, 1.7GHz, 16EU, IBECC, TCC, 9W IUC Intel Atom® x6414RE Processor, quad-core / 4T, 1.5GHz, 16EU, IBECC, TCC, 9W IUC Intel Atom® x6214RE Processor, dual-core / 2T, 1.4GHz, 16EU, IBECC, TCC, 6W IUC Intel Atom® x6212RE Processor, dual-core / 2T, 1.2GHz, 16EU, IBECC, TCC, 6W IUC Intel Atom® x6425E Processor, quad-core / 4T, 2.0/3.0GHz, 32EU, IBECC, 12W EUC Intel Atom® x6413E Processor, quad-core / 4T, 1.5/3.0GHz, 16EU, IBECC, 9W EUC Intel Atom® x6211E Processor, dual-core / 2T, 1.3/3.0GHz, 16EU, IBECC, 6W EUC Intel® Pentium® J6426 Processor, quad-core / 4T, 2.0/3.0GHz, 32EUs, 10W, PUC Intel® Pentium® N6415 Processor, quad-core / 4T, 1.2/3.0GHz, 16EU, 6W, PUC Intel® Celeron® J6413 Processor, quad-core / 4T, 1.8/3.0GHz, 16EU, 10W, PUC Intel® Celeron® N6211 Processor, dual-core / 2T, 1.2/3.0GHz, 16EU, 6W, PUC Intel® Technologies: Enhanced Intel® SpeedStep® Technology Intel® Virtualization Technology (VTx-2, VT-d) Intel® Trusted Execution Engine (TXE) Intel® Time Coordinated Computing (TCC) Precision Time Measurement (PTM) Precision Time Measurement (PTP) IUC - Intel Industrial Use Conditions EUC - Intel Embedded Use Conditions PUC - Intel PC Client Use Conditions
Chipset	SOC
RAM	2x 260-pin SO-DIMM socket for up to 2x 16 GB (dual channel operation) or 1x 16 GB (single channel operation) DDR4-3200 (max. transfer speed depending on memory type) In-band ECC (on selected variants)
Flash	On-board eMMC mass storage option, scalable capacity up to 256GB
Storage Interfaces	Up to 2x SATA 6Gb/s
USB	2x USB 3.1 8x USB 2.0
Serial Interfaces	Two UARTS
Bus Interfaces	8x PCI Express Gen 3, bifurcation options 1x4/2x2/1x2+2x1/4x1 on PCIe[0:3], x2x2/x1x1 on PCIe[4:7], up to 6 root ports LPC bus (Low Pin Count bus; no DMA support)
Display Controller	Integrated Intel graphics Gen11LP Up to 32 execution units (EU) DirectX 12, OpenGL 4.5/ES 3.x, OpenCL 1.2 driver support Media codec support: MPEG2, H.264 (L5.2), VC-1, WMV9, VP8, VP9, JPEG/MPEG, H.265 (HEVC)
Display Interfaces	Three independent displays supported: 2x Digital Display Interface (DP 1.2/1.3/1.4 (max. 4096 x 2160 @ 60Hz), HDMI 1.4b/2.0b (max. 4K @ 60Hz) 1x Embedded DisplayPort 1.3 (on variants without LVDS only); max. 4096 x 2160 @ 60Hz, LVDS 24bit, dual-channel (not on all variants); max. 1920 x 1200 @ 60Hz
Network Interface	10/100/1000Base-T (SoC integrated controller) Supports Time-Sensitive Networking (TSN) and Time Coordinated Computing (TCC)
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	AMI Aptio UEFI
OS Support	Windows 10 IoT Enterprise LTSC 2021 Windows 11 IoT Enterprise LTSC 2024 Linux (Yocto Project)
Power Requirement	Wide range input +8.5 ... +20V, 5V Stby optional, 7 W to 14 W (typ.)
Environment	Ambient Temperature; 0° ... 60°C (operating), -25° ... 85°C (storage) Extended temp. variants: -40 ... +85°C (operating) Humidity: 5 ... 95% (operating, non-condensing), 5 ... 95% (storage, non-condensing)
Dimensions	95mm x 95mm
Cooling	Passive heat sink Active heat sink with fan Heat spreader with threaded or non-threaded standoffs
Carrier	Evaluation/carrier board options

Technical Data for TRIA C6C-EL

Order Reference

Order No.	Description	Reference	Status*
86110	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom x6425RE, quad-core, 1.9GHz, 12W; Graphics: Intel Gen 11LP; 32 EUs; 2x DP/HDMI; LVDS; Ethernet: Intel integrated Gbit; HD audio; 2x SATA, 2x USB3/2, 6x USB2, 8x PCIe Gen 3; TPM 2.0; 2x socket for DDR4 SO-DIMM, in-band ECC; -40...+85°C (recommended for 24/7 operation)	MSC C6C-EL-X6425RE- NN221I PCBFTX	PV
86122	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom x6414RE, quad-core, 1.5GHz, 9W; Graphics: Intel Gen 11LP; 16 EUs; 2x DP/HDMI; LVDS; Ethernet: Intel integrated Gbit; HD audio; 2x SATA, 2x USB3/2, 6x USB2, 8x PCIe Gen 3; TPM 2.0; 2x socket for DDR4 SO-DIMM, in-band ECC; -40...+85°C (recommended for 24/7 operation)	MSC C6C-EL-X6414RE- NN221I PCBFTX	PV
86124	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom x6212RE, dual-core, 1.2GHz, 6W; Graphics: Intel Gen 11LP; 16 EUs; 2x DP/HDMI; LVDS; Ethernet: Intel integrated Gbit; HD audio; 2x SATA, 2x USB3/2, 6x USB2, 8x PCIe Gen 3; TPM 2.0; 2x socket for DDR4 SO-DIMM, in-band ECC; -40...+85°C (recommended for 24/7 operation)	MSC C6C-EL-X6212RE- NN221I PCBFTX	PV
86126	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom x6425E, quad-core, 2.0GHz, 12W; Graphics: Intel Gen 11LP; 32 EUs; 2x DP/HDMI; LVDS; Ethernet: Intel integrated Gbit; HD audio; eMMC 32GB 2x SATA, 2x USB3/2, 6x USB2, 8x PCIe Gen 3; TPM 2.0; 2x socket for DDR4 SO-DIMM, in-band ECC; -40...+85°C	MSC C6C-EL-X6425E- N5201I PCBFTX	OR
86128	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom x6413E, quad-core, 1.5GHz, 9W; Graphics: Intel Gen 11LP; 16 EUs; 2x DP/HDMI; LVDS; Ethernet: Intel integrated Gbit; HD audio; 2x SATA, 2x USB3/2, 6x USB2, 8x PCIe Gen 3; TPM 2.0; 2x socket for DDR4 SO-DIMM, in-band ECC; -40...+85°C	MSC C6C-EL-X6413E- NN221I PCBFTX	OR
86130	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Atom x6211E, dual-core, 1.3GHz, 6W; Graphics: Intel Gen 11LP; 16 EUs; 2x DP/HDMI; LVDS; Ethernet: Intel integrated Gbit; HD audio; 2x SATA, 2x USB3/2, 6x USB2, 8x PCIe Gen 3; TPM 2.0; 2x socket for DDR4 SO-DIMM, in-band ECC; -40...+85°C	MSC C6C-EL-X6211E- NN221I PCBFTX	OR

COM Express Type 6



Order No.	Description	Reference	Status*
86132	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Pentium J6426, quad-core, 2.0GHz, 10W; Graphics: Intel Gen 11LP; 32 EUs; 2x DP/HDMI; eDP; Ethernet: Intel integrated Gbit; HD audio; 2x SATA, 2x USB3/2, 6x USB2, 8x PCIe Gen 3; TPM 2.0; 2x socket for DDR4 SO-DIMM;	MSC C6C-EL-J6426- NN121C PCBFTX	OR
86134	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron J6413, quad-core, 1.8GHz, 10W; Graphics: Intel Gen 11LP; 16 EUs; 2x DP/HDMI; eDP; Ethernet: Intel integrated Gbit; HD audio; 2x SATA, 2x USB3/2, 6x USB2, 8x PCIe Gen 3; TPM 2.0; 2x socket for DDR4 SO-DIMM;	MSC C6C-EL-J6413- NN121C PCBFTX	OR
95063	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Pentium J6426, quad-core, 2.0GHz, 10W; Graphics: Intel Gen 11LP; 32 EUs; 2x DP/HDMI; LVDS; Ethernet: Intel integrated Gbit; HD audio; 2x SATA, 2x USB3/2, 6x USB2, 8x PCIe Gen 3; TPM 2.0; 2x socket for DDR4 SO-DIMM;	MSC C6C-EL-J6426- NN221C PCBFTX	OR
95041	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron J6413, quad-core, 1.8GHz, 10W; Graphics: Intel Gen 11LP; 16 EUs; 2x DP/HDMI; LVDS; Ethernet: Intel integrated Gbit; HD audio; 2x SATA, 2x USB3/2, 6x USB2, 8x PCIe Gen 3; TPM 2.0; 2x socket for DDR4 SO-DIMM;	MSC C6C-EL-J6413- NN221C PCBFTX	OR

Ordering Information for TRIA C6C-EL

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

Accessories

Carrier Options

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
82415	Passive Heatsink for C6C-EL (Atom versions only), consisting of a single-piece aluminum profile with fins, standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to SOC.	MSC C6C-EL-01 HSI-001
85123	Heatspreader for C6C-EL (Atom versions only). Single-piece aluminum profile with standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to SOC.	MSC C6C-EL-01 HSP-001
85930	Passive Heatsink for C6C-EL (Pentium/Celeron versions only), consisting of a single-piece aluminum profile with fins, standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to SOC.	MSC C6C-EL-02 HSI-001
85124	Heatspreader for C6C-EL (Atom versions only). Single-piece aluminum profile with threaded standoffs (M2.5), screws and thermopad for the thermal contact to SOC.	MSC C6C-EL-02 HSP-001
85941	Heatspreader for C6C-EL (Pentium/Celeron versions only). Single-piece aluminum profile with standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to SOC.	MSC C6C-EL-03 HSP-001
85942	Heatspreader for C6C-EL (Pentium/Celeron versions only). Single-piece aluminum profile with threaded standoffs (M2.5), screws and thermopad for the thermal contact to SOC.	MSC C6C-EL-04 HSP-001

Cooling Devices for TRIA C6C-EL

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

Description	Description	Reference
117594	8GB DDR4-3200 SO-DIMM, Commercial Temp.	MOD SODIMM DDR4 8GB PC4-25600 CL22
97869	16GB DDR4-3200 SO-DIMM, Commercial Temp.	MOD SODIMM DDR4 16GB PC4-25600 CL22 2B
93718	8GB DDR4-3200 SO-DIMM, Wide Temp.	MOD SODIMM DDR4 8GB PC4-25600 CL22 1B
93720	8GB DDR4-3200 SO-DIMM, Industrial Temp.	MOD SODIMM DDR4 8GB PC4-25600 CL22 1B

Memory Options for TRIA C6C-EL

Please contact your Tria Technologies representative for information on supported memory options.

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