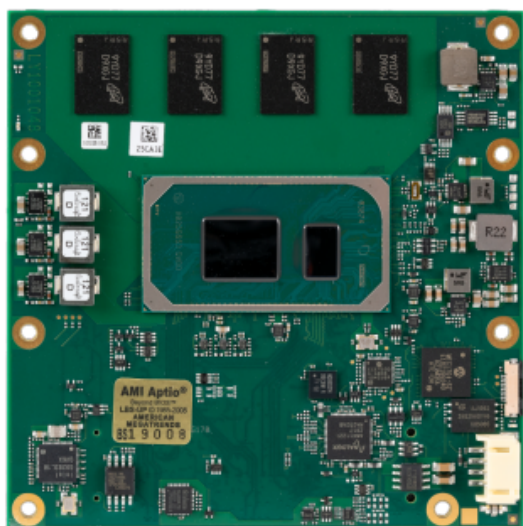


TRIA C6C-TLU

Intel® Core™ 11th Generation



95 x 95

15 / 35 W

-40-+85

COM 
Express



Highlights

- Scalable CPU performance, quad and dual core variants
- Power efficient processors
- Rugged module design, 24/7 operation, extended temperature variants
- Optional conformal coating
- Long-term product availability
- Integrated Intel Gen12 graphics, max. 96 execution units
- Up to 32GB LPDDR4X memory, chip-down, dual-channel
- In-band ECC option
- Two SATA 6Gb/s mass storage interfaces
- Three DisplayPort/HDMI interfaces
- LVDS and Embedded DisplayPort interface
- Up to four independent displays
- DirectX 12, OpenGL 4.6, OpenCL 1.2/2.x driver support
- Four USB 3.1 Gen1/2 and eight USB 2.0 interfaces
- Two UARTs
- Up to nine PCI Express™ Gen 3 lanes
- One Gb Ethernet port
- TSN, TCC support
- UEFI Firmware

COM Express Type 6



- Trusted Platform Module TPM 2.0

Technical Data

Technology	x86
Formfactor	COM Express Compact
CPU	Intel® Core™ i7-1185GRE quad-core 2.8/4.4 GHz, 8 threads, 96 EUs, 12MB L2, 28/15/12W TDP/cTDP down1/2, extended temperature Intel® Core™ i7-1185G7E quad-core 2.8/4.4 GHz, 8 threads, 96 EUs, 12MB L2, 28/15/12W TDP/cTDP down1/2 Intel® Core™ i5-1145GRE quad-core 2.6/4.1 GHz, 8 threads, 80 EUs, 8MB L2, 28/15/12W TDP/cTDP down1/2, extended temperature Intel® Core™ i5-1145G7E quad-core 2.6/4.1 GHz, 8 threads, 80 EUs, 8MB L2, 28/15/12W TDP/cTDP down1/2 Intel® Core™ i3-1115GRE dual-core 3.0/3.9 GHz, 4 threads, 48 EUs, 6MB L2, 28/15/12W TDP/cTDP down1/2, extended temperature Intel® Core™ i3-1115G4E dual-core 3.0/3.9 GHz, 4 threads, 48 EUs, 6MB L2, 28/15/12W TDP/cTDP down1/2 Intel® Celeron® 6305E dual-core 1.8 GHz, 2 threads, 48 EUs, 4MB L2, 15W TDP Note: support for 24/7 operation supported by selected processor variants. Please see the order reference for details. Additional configuration settings may apply which are defined in the product manual.
Chipset	Integrated in Multi-Chip-Package
RAM	Up to 32 GB SDRAM (LPDDR4X-4266); dual channel operation; memory down
Storage Interfaces	2x SATA 6Gb/s
USB	4x USB 3.1 Gen 1/Gen 2 8x USB 2.0
Serial Interfaces	2x high-speed serial ports from PCH
Bus Interfaces	PCI Express Gen3, 1x4 + 5x1 LPC bus (Low Pin Count bus; no DMA support)
Display Controller	Integrated Intel Gen12 Gfx Engine Up to 96 execution units (EU) 3D Acceleration: DirectX® 10/11/12, OpenGL 4.6, OpenCL™ 1.2/2.x; Video Decode/Encode: MPEG2, JPEG, HEVC, VP9, SCC, AV1, AVC
Display Interfaces	Four independent displays supported 3x Digital Display Interface (DP 1.4, HDMI 2.0b) 1x Embedded DisplayPort 1.4b 1x LVDS 24bit, dual-channel;
Network Interface	10/100/1000Base-TX with TSN support I-Temp variants: Intel® i225-IT (1Gbit maximum at extended temperatures) C-Temp variants: Intel® i225-LM
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

COM Express Type 6



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 10 IoT Enterprise RS5 (64bit) BSP for Linux (Yocto)
Power Requirement	Voltage: +8.5V to +20V, +5V Stby optional Power Consumption: 15 W to 35 W (typ., variant depending)
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
Certificates	UL / CE

Technical Data for TRIA C6C-TLU

Order Reference

Order No.	Description	Reference	Status *
87769	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core U i7-1185GRE quad-core, 2.8/4.4GHz, 28/15/12W cTDP; Graphics: Intel Gen 12, 96 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i225 Gbit; HD audio; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 3 1x4+5x1; TPM 2.0; 32GB LPDDR4X-4267 memory, in-band ECC; -40...+85°C, recommended for 24/7 operation.	MSC C6C-TLU-1185GRE-5 N3011 PCBFTX	OR
87767	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core U i7-1185GRE quad-core, 2.8/4.4GHz, 28/15/12W cTDP; Graphics: Intel Gen 12, 96 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i225 Gbit; HD audio; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 3 1x4+5x1; TPM 2.0; 16GB LPDDR4X-4267 memory, in-band ECC; -40...+85°C, recommended for 24/7 operation.	MSC C6C-TLU-1185GRE-4 N3011 PCBFTX	PV
87765	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core U i7-1185GRE quad-core, 2.8/4.4GHz, 28/15/12W cTDP; Graphics: Intel Gen 12, 96 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i225 Gbit; HD audio; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 3 1x4+5x1; TPM 2.0; 8GB LPDDR4X-4267 memory, in-band ECC; -40...+85°C, recommended for 24/7 operation.	MSC C6C-TLU-1185GRE-3 N3011 PCBFTX	PV
87763	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core U i7-1185G7E quad-core, 2.8/4.4GHz, 28/15/12W cTDP; Graphics: Intel Gen 12, 96 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i225 Gbit; HD audio; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 3 1x4+5x1; TPM 2.0; 32GB LPDDR4X-4267 memory.	MSC C6C-TLU-1185G7E-5 N301C PCBFTX	OR
110677	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core U i5-1145GRE quad-core, 2.6/4.1GHz, 28/15/12W cTDP; Graphics: Intel Gen 12, 80 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i225 Gbit; HD audio; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 3 1x4+5x1; TPM 2.0; 32GB LPDDR4X-4267 memory, in-band ECC; -40...+85°C, recommended for 24/7 operation.	MSC C6C-TLU-1145GRE-5 N3011 PCBFTX	OR
87761	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core U i5-1145GRE quad-core, 2.6/4.1GHz, 28/15/12W cTDP; Graphics: Intel Gen 12, 80 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i225 Gbit; HD audio; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 3 1x4+5x1; TPM 2.0; 16GB LPDDR4X-4267 memory, in-band ECC; -40...+85°C, recommended for 24/7 operation.	MSC C6C-TLU-1145GRE-4 N3011 PCBFTX	OR

COM Express Type 6



Order No.	Description	Reference	Status *
87759	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core U i5-1145GRE quad-core, 2.6/4.1GHz, 28/15/12W cTDP; Graphics: Intel Gen 12, 80 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i225 Gbit; HD audio; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 3 1x4+5x1; TPM 2.0; 8GB LPDDR4X-4267 memory, in-band ECC; -40...+85°C, recommended for 24/7 operation.	MSC C6C-TLU-1145GRE-3 N301I PCBFTX	PV
87757	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core U i5-1145GRE quad-core, 2.6/4.1GHz, 28/15/12W cTDP; Graphics: Intel Gen 12, 80 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i225 Gbit; HD audio; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 3 1x4+5x1; TPM 2.0; 4GB LPDDR4X-4267 memory, in-band ECC; -40...+85°C, recommended for 24/7 operation.	MSC C6C-TLU-1145GRE-2 N301I PCBFTX	OR
87755	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core U i5-1145G7E quad-core, 2.6/4.1GHz, 28/15/12W cTDP; Graphics: Intel Gen 12, 80 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i225 Gbit; HD audio; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 3 1x4+5x1; TPM 2.0; 16GB LPDDR4X-4267 memory.	MSC C6C-TLU-1145G7E-4 N301C PCBFTX	OR
87752	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core U i3-1115GRE dual-core, 3.0/3.9GHz, 28/15/12W cTDP; Graphics: Intel Gen 12, 48 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i225 Gbit; HD audio; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 3 1x4+5x1; TPM 2.0; 16GB LPDDR4X-3733 memory, in-band ECC; -40...+85°C, recommended for 24/7 operation.	MSC C6C-TLU-1115GRE-4 N301I PCBFTX	OR
87753	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core U i3-1115GRE dual-core, 3.0/3.9GHz, 28/15/12W cTDP; Graphics: Intel Gen 12, 48 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i225 Gbit; HD audio; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 3 1x4+5x1; TPM 2.0; 8GB LPDDR4X-3733 memory, in-band ECC; -40...+85°C, recommended for 24/7 operation.	MSC C6C-TLU-1115GRE-3 N301I PCBFTX	PV
87689	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core U i3-1115GRE dual-core, 3.0/3.9GHz, 28/15/12W cTDP; Graphics: Intel Gen 12, 48 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i225 Gbit; HD audio; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 3 1x4+5x1; TPM 2.0; 4GB LPDDR4X-3733 memory, in-band ECC; -40...+85°C, recommended for 24/7 operation.	MSC C6C-TLU-1115GRE-2 N301I PCBFTX	PV
117792	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core U i3-1115G4E dual-core, 3.0/3.9GHz, 28/15/12W cTDP; Graphics: Intel Gen 12, 48 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i225 Gbit; HD audio; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 3 1x4+5x1; TPM 2.0; 16GB LPDDR4X-3733 memory.	MSC C6C-TLU-1115G4E-4 N301C PCBFTX	OR

COM Express Type 6



Order No.	Description	Reference	Status *
87687	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Core U i3-1115G4E dual-core, 3.0/3.9GHz, 28/15/12W cTDP; Graphics: Intel Gen 12, 48 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i225 Gbit; HD audio; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 3 1x4+5x1; TPM 2.0; 8GB LPDDR4X-3733 memory.	MSC C6C-TLU-1115G4E-3 N301C PCBFTX	OR
87771	COM Express Type 6 Compact module (95mm x 95mm); CPU: Intel Celeron 6305E dual-core, 1.8GHz, 15W TDP; Graphics: Intel Gen 12, 48 EUs; 3x DP/HDMI; 1x LVDS; 1x eDP; Ethernet: Intel i225 Gbit; HD audio; 2x SATA, 4x USB3, 8x USB2, PCIe Gen 3 1x4+5x1; TPM 2.0; 4GB LPDDR4X-3733 memory.	MSC C6C-TLU-6305E-2N3 01C PCBFTX	OR

Ordering Information for TRIA C6C-TLU

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

Accessories

Carrier Boards

Order No.	Description	Reference
67295	COM Express Type 6 Evaluation Carrier Board with PCI Express x4/x16 slot, USB 3.0/2.0, GbE, SATA, DisplayPort, eDP/LVDS, VGA and HD audio interfaces; Mini PCI Express socket, SD card slot, ATX power connector and single 12V power jack. Dimensions: 170mm x 170mm (Mini-ITX form factor)	MSC C6-MB-EV-001 PCBFTX
41857	COM Express Type 6 Evaluation Carrier Board with various PCI Express x1, x4 and x16 slots, USB 3.0/2.0, GbE, SATA, DisplayPort, HDMI, LVDS, eDP, VGA, HD audio interfaces; mSATA and Mini PCI Express sockets, POST code display, ATX power connector. Dimensions: 305 x 244 mm (ATX form factor)	MSC C6-MB-EVA PCBFTX

Carrier Board TRIA C6B-KLH/CFLR/CFLH/TRIA C6C-TLU/WLU/KLU/EL/AL/BT

Cooling Solutions

Order No.	Description	Reference
84373	Passive Heatsink for C6C-TLU. Single-piece aluminum profile with fins, standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to SOC and memory.	MSC C6C-TLU-01 HSI-001
84375	Heatspreader for C6C-TLU. Single-piece aluminum profile, standoffs without thread (2.7mm inner diameter), screws and thermopad for the thermal contact to SOC and memory.	MSC C6C-TLU-01 HSP-001
84377	Heatspreader for C6C-TLU. Single-piece aluminum profile with threaded standoffs (M2.5), screws and thermopad for the thermal contact to SOC and memory.	MSC C6C-TLU-02 HSP-001

Cooling Devices for TRIA C6C-TLU

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

COM Express Type 6



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