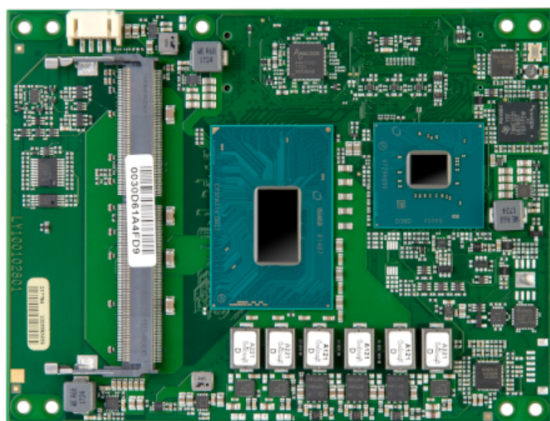


TRIA C6B-CFLR

Intel® Core™ 9th Generation



125 x 95

25 / 55W

0-+60

COM 
Express



Highlights

- Intel® Xeon®
 - E-2276ME (6C, 2.8/4.5GHz, 45/35W TDP/cTDP)
 - E-2276ML (6C, 2.0/4.2GHz, 25W TDP)
 - E-2254ME (4C, 2.6/3.8GHz, 45/35W TDP/cTDP)
 - E-2254ML (4C, 1.7/3.5GHz, 25W TDP)
- Intel® Core™
 - i7-9850HE (6C, 2.7/4.4GHz, 45/35W TDP/cTDP)
 - i7-9850HL (6C, 1.9/4.1GHz, 25W TDP)
 - i3-9100HL (4C, 1.6/2.9GHz, 25W TDP)
- Intel® Celeron®
 - G4930E (2C, 2.4GHz, 35W TDP)
 - G4932E (2C, 1.9GHz, 25W TDP)
- Intel® UHD Graphics
- Intel® chipsets QM370 or CM246
- Up to 32GB DDR4-2666 SDRAM, dual channel, optional ECC
- Four SATA 6Gb/s mass storage interfaces
- Three DisplayPort/HDMI/DVI interfaces

COM Express Type 6



- Embedded DisplayPort / LVDS interface
- Triple independent display support
- DirectX 12, OpenGL 4.5, OpenCL 2.x
- Resolution up to 4096 x 2304
- Eight PCI Express™ x1 lanes, configurable up to x4, Intel® Rapid Storage Technology support
- PEG configurable as 1×16 or 2×8 or 1×8 + 2×4
- Four USB 3.1/2.0 and four USB 2.0 interfaces
- Trusted Platform Module
- UEFI Firmware

Technical Data

Technology	x86
Formfactor	COM Express Basic
CPU	Intel® Xeon® E-2276ME (six-core, 2.8/4.5GHz, 12MB cache, 45/35W TDP/cTDP), Intel® Xeon® E-2276ML (six-core, 2.0/4.2GHz, 12MB cache, 25W TDP), Intel® Xeon® E-2254ME (quad-core, 2.6/3.8GHz, 8MB cache, 45/35W TDP/cTDP), Intel® Xeon® E-2254ML (quad-core, 1.7/3.5GHz, 8MB cache, 25 TDP), Intel® Core™ i7-9850HE (six-core, 2.7/4.4GHz, 9MB cache, 45/35W TDP/cTDP), Intel® Core™ i7-9850HL (six-core, 1.9/4.1GHz, 9MB cache, 25W TDP), Intel® Core™ i3-9100HL (quad-core, 1.6/2.9GHz, 6MB cache, 25W TDP), Intel® Celeron® G4930E (dual-core, 2.4GHz, 2MB cache, 35W TDP), Intel® Celeron® G4932E (dual-core, 1.9GHz, 2MB cache, 25W TDP) Intel® Technologies: Intel® vPro, Intel® 64, Intel® Virtualization Technology (VT-x), Intel® Virtualization Technology for Directed I/O (VT-d), Intel® Trusted Execution Technology*, Intel® Adv. Encryption Standard AES-NI, Intel® Turbo Boost Technology 2.0 * not on all models
Chipset	Intel® Platform Controller Hubs (PCH) QM370 or CM246
RAM	2x 260-pin SO-DIMM socket for up to 2x 16GB DDR4 SDRAM (DDR4-2666 ¹); dual channel operation; ECC option ¹² ¹ Depending on SO-DIMM type ² ECC optionally supported on models except Core i7-9850HE/HL
Storage Interfaces	4x SATA channels (up to 6Gb/s)
USB	4x USB 3.1 (Gen 1 & 2)/2.0, 4x USB 2.0
Serial Interfaces	2x high-speed serial ports from PCH
Bus Interfaces	8x PCI Express x1 Gen 3, 1x PCI Express Graphics (PEG) x 16 Gen. 3 LPC bus (Low Pin Count bus; no DMA support)
Display Controller	Integrated Intel UHD graphics Gen. 9 3D Acceleration: DirectX® 11/12, OpenGL 4.3/4.4, OpenGL ES 2.0, OpenCL 2.x; HW accelerated Video Decode: H.264/AVC, VP8, VP9, VP9 10 Bit, H.265/HEVC 8 bit, H.265/HEVC 10 Bit, MPEG2, MJPEG, VC-1 HW accelerated Video Encode: H.264/AVC, VP8, VP9, H.265/HEVC 8 bit, H.265/HEVC 10 Bit, MPEG2, MJPEG. Triple independent display support
Display Interfaces	Display Port and HDMI/DVI: 3x Digital Display Interface, usable as DisplayPort 1.2 (up to 4096 x 2304 @ 60Hz), also usable as HDMI 1.4b or DVI (up to 4096 x 2160 @ 30Hz) 1x Embedded DisplayPort 1.4 (on variants without LVDS only); 4096 x 2304 @ 60Hz LCD: LVDS 24bit, dual-channel (not on all variants); 1920 x 1200 @ 60Hz
Network Interface	10/100/1000Base-TX (integrated in PCH, Intel® i219LM PHY)
Audio Interface	High Definition Audio
Security Device	TPM 2.0
Miscellaneous	Watchdog Timer: Initiates system reset, programmable Fan Supply: 4-pin header for 12V CPU fan, PWM speed controlled and PWM speed control for system fan supported RTC battery: External System Monitoring: Voltage, temperature, CPU fan, system fan

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
Power Requirement	Voltage: +8.5V to +20V, +5V Stby optional Power Consumption: 35 W to 55 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	125mm x 95mm x 13mm* (*Measured from module PCB bottom side to heat spreader top side. Different heights apply, when using other cooling solutions.)

Technical Data for TRIA C6B-CFLR

Order Reference

Order No.	Description	Reference	Status *
80306	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Xeon E-2276ME, six-core, 2.8/4.5GHz, 45W TDP; Chipset:CM246; Graphics: integrated Intel HD Gen 9 (GT2); LVDS (24 Bit, dual channel); 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3.1/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen3; 2x socket for DDR4 or DDR4ECC SO-DIMM; TPM 2.0;	MSC C6B-CFLR-2276ME-NN1201C PCBFTX	OR
80308	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Xeon E-2276ML, six-core, 2.0/4.2GHz, 25W TDP; Chipset:CM246; Graphics: integrated Intel HD Gen 9 (GT2); LVDS (24 Bit, dual channel); 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3.1/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen3; 2x socket for DDR4 or DDR4ECC SO-DIMM; TPM 2.0;	MSC C6B-CFLR-2276ML-NN1201C PCBFTX	OR
96506	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Xeon E-2276ML, six-core, 2.0/4.2GHz, 25W TDP; Chipset:CM246; Graphics: integrated Intel HD Gen 9 (GT2); Embedded DisplayPort (eDP); 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3.1/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen3; 2x socket for DDR4 or DDR4ECC SO-DIMM; TPM 2.0;	MSC C6B-CFLR-2276ML-NN1101C PCBFTX	OR
80302	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Xeon E-2254ME, four-core, 2.6/3.8GHz, 45W TDP; Chipset:CM246; Graphics: integrated Intel HD Gen 9 (GT2); LVDS (24 Bit, dual channel); 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3.1/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen3; 2x socket for DDR4 or DDR4ECC SO-DIMM; TPM 2.0;	MSC C6B-CFLR-2254ME-NN1201C PCBFTX	OR
81116	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Xeon E-2254ML, four-core, 1.7/3.5GHz, 25W TDP; Chipset:CM246; Graphics: integrated Intel HD Gen 9 (GT2); Embedded DisplayPort (eDP); 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3.1/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen3; 2x socket for DDR4 or DDR4ECC SO-DIMM; TPM 2.0;	MSC C6B-CFLR-2254ML-NN1101C PCBFTX	PV

COM Express Type 6



Order No.	Description	Reference	Status *
80304	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Xeon E-2254ML, four-core, 1.7/3.5GHz, 25W TDP; Chipset:CM246; Graphics: integrated Intel HD Gen 9 (GT2); LVDS (24 Bit, dual channel); 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3.1/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen3; 2x socket for DDR4 or DDR4ECC SO-DIMM; TPM 2.0;	MSC C6B-CFLR-2254ML-NN1201C PCBFTX	PV
80312	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Core i7-9850HE, six-core, 2.7/4.4GHz, 45W TDP; Chipset:QM370; Graphics: integrated Intel HD Gen 9 (GT2); LVDS (24 Bit, dual channel); 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3.1/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen3; 2x socket for DDR4 SO-DIMM; TPM 2.0;	MSC C6B-CFLR-9850HE-NN0201C PCBFTX	PV
80314	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Core i7-9850HL, six-core, 1.9/4.1GHz, 25W TDP; Chipset:QM370; Graphics: integrated Intel HD Gen 9 (GT2); Embedded DisplayPort (eDP); 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3.1/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen3; 2x socket for DDR4 SO-DIMM; TPM 2.0;	MSC C6B-CFLR-9850HL-NN0101C PCBFTX	PV
80310	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Core i3-9100HL, four-core, 1.6/2.9GHz, 25W TDP; Chipset:QM370; Graphics: integrated Intel HD Gen 9 (GT2); Embedded DisplayPort (eDP); 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3.1/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen3; 2x socket for DDR4 SO-DIMM; TPM 2.0;	MSC C6B-CFLR-9100HL-NN0101C PCBFTX	PV
80316	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Celeron G4930E, two-core, 2.4GHz, 35W TDP; Chipset:QM370; Graphics: integrated Intel HD Gen 9 (GT2); Embedded DisplayPort (eDP); 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3.1/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen3; 2x socket for DDR4 SO-DIMM; TPM 2.0;	MSC C6B-CFLR-G4930E-NN0101C PCBFTX	PV
76023	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Celeron G4930E, two-core, 2.4GHz, 35W TDP; Chipset:QM370; Graphics: integrated Intel HD Gen 9 (GT2); LVDS (24 Bit, dual channel); 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3.1/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen3; 2x socket for DDR4 SO-DIMM; TPM 2.0;	MSC C6B-CFLR-G4930E-NN0201C PCBFTX	OR

COM Express Type 6



Order No.	Description	Reference	Status*
80318	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Celeron G4932E, two-core, 1.9GHz, 25W TDP; Chipset:QM370; Graphics: integrated Intel HD Gen 9 (GT2); Embedded DisplayPort (eDP); 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3.1/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen3; 2x socket for DDR4 SO-DIMM; TPM 2.0;	MSC C6B-CFLR- G4932E- NN0101C PCBFTX	OR

Ordering Information for TRIA C6B-CFLR

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

COM Express Type 6



Accessories

Carrier Options

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
1131080	Active Heatsink for C6B-SLH, C6B-KLH, C6B-CFLH and C6B-CFLR, consisting of a single-piece aluminum profile with fins, standoffs without thread (2.7mm inner diameter), screws and thermopads for the thermal contact to CPU and chipset. PWM fan 80x80x15mm.	MSC C6B-SLH-01 HSF-001
1131081	Passive Heatsink for C6B-SLH, C6B-KLH, C6B-CFLH and C6B-CFLR, consisting of a single-piece aluminum profile with fins, standoffs without thread (2.7mm inner diameter), screws and thermopads for the thermal contact to CPU and chipset.	MSC C6B-SLH-01 HSI-001
1131082	Heatspreader for C6B-SLH, C6B-KLH, C6B-CFLH and C6B-CFLR. Single-piece aluminum profile, standoffs without thread (2.7mm inner diameter), screws and thermopads for the thermal contact to CPU and chipset. No fan, no SO-DIMM cutout.	MSC C6B-SLH-01 HSP-001
1131083	Heatspreader for C6B-SLH, C6B-KLH, C6B-CFLH and C6B-CFLR. Single-piece aluminum profile, standoffs with M2.5 thread, screws and thermopads for the thermal contact to CPU and chipset. No fan, no SO-DIMM cutout.	MSC C6B-SLH-02 HSP-001

Cooling Devices for TRIA C6B-KLH/SLH/CFLR/CFLH

Memory Options

Order No.	Description	Reference
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Memory Options for TRIA C6B-CFLR/CFLH. Please contact your Tria Technologies representative for information on supported memory options.

COM Express Type 6



Starter Kits

Order No.	Description	Reference
78252	Starterkit for COM Express Type 6 modules with Intel 8th or 9th generation Core processors (Coffee Lake H, Coffee Lake Refresh). Consists of the TRIA C6-MB-EV Mini-ITX platform board, suitable Heatsink with fan, two memory modules and a suitable power supply with cable kit. Please order separately the COM Express C6B-CFLH or C6B-CFLR module of your choice.	MSC C6-SK-CFLH-EV-KIT001 BRDFTX

Starter Kits for TRIA C6B-CFLR/CFLH

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