

## TRIA C6B-KLH

Intel® Core™ 7th Generation



125 x 95

35 / 55 W

0 --+60

**COM**   
**Express**



## Highlights

- Intel® Core™ i7-7820EQ (quad-core, 3.0/3.7GHz, 45/35W cTDP),
- Intel® Core™ i5-7440EQ (quad-core, 2.9/3.6GHz, 45/35W cTDP),
- Intel® Core™ i5-7442EQ (quad-core, 2.1/2.9GHz, 25W TDP),
- Intel® Core™ i3-7100E (dual-core, 2.9GHz, 35W TDP),
- Intel® Core™ i3-7102E (dual-core, 2.1GHz, 25W TDP),
- Intel® Xeon® E3-1505Mv6 (quad-core, 3.0/4.0GHz, 45/35W cTDP),
- Intel® Xeon® E3-1505Lv6 (quad-core, 2.2/3.0GHz, 25W TDP)
- Intel® HD Graphics 630, P630
- Intel® chipsets QM175, HM175 or CM238
- Up to 32GB DDR4-2400 SDRAM, dual channel (ECC optional)
- Four SATA 6Gb/s mass storage interfaces
- Three DisplayPort/HDMI/DVI interfaces
- Embedded DisplayPort / LVDS (24 Bit, dual channel) interface
- Triple independent display support
- DirectX 12, OpenGL 4.4, OpenCL 2.x
- Resolution up to 4096 x 2304
- Eight PCI Express™ x1 lanes; PEG x16
- Four USB 3.0/2.0 and four USB 2.0 interfaces
- Trusted Platform Module
- UEFI Firmware

# COM Express Type 6



## Technical Data

<b>Technology</b>	x86
<b>Formfactor</b>	COM Express Basic
<b>CPU</b>	Intel® Core™ i7-7820EQ (quad-core, 3.0/3.7GHz, 8MB cache, 45/35W cTDP), Intel® Core™ i5-7440EQ (quad-core, 2.9/3.6GHz, 6MB cache, 45/35W cTDP), Intel® Core™ i5-7442EQ (quad-core, 2.1/2.9GHz, 6MB cache, 25W TDP), Intel® Core™ i3-7100E (dual-core, 2.9GHz, 3MB cache, 35W TDP), Intel® Core™ i3-7102E (dual-core, 2.1GHz, 3MB cache, 25W TDP), Intel® Xeon® E3-1505Mv6 (quad-core, 3.0/4.0GHz, 8MB cache, 45/35W cTDP), Intel® Xeon® E3-1505Lv6 (quad-core, 2.2/3.0GHz, 8MB 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
<b>Chipset</b>	Intel® Platform Controller Hubs (PCH) QM175, HM175 or CM238
<b>RAM</b>	2x 260-pin SO-DIMM socket for up to 2x 16GB DDR4 SDRAM (DDR4-2400); dual channel operation; ECC option
<b>Storage Interfaces</b>	4x SATA channels (up to 6Gb/s)
<b>USB</b>	4x USB 3.0/2.0, 4x USB 2.0
<b>Serial Interfaces</b>	2x high-speed serial ports from PCH
<b>Bus Interfaces</b>	8x PCI Express® x1 Gen 3 1x PCI Express® Graphics (PEG) x 16 Gen 4 and 3 LPC bus (Low Pin Count bus; no DMA support)
<b>Display Controller</b>	Integrated Intel HD graphics Gen. 9 3D Acceleration: DirectX® 11/12, OpenGL 4.3/4.4, OpenGL ES 2.0, OpenCL 2.x; Video Decode: H.264 @ Level 5.2, H.265/HEVC 10-bit, MPEG2, VC1/WMV, JPEG, VP8, VP9 10-bit; Video Encode: H.263, H.264, VP8, AVC JPEG, VP9 GPU-accelerated. Triple independent display support
<b>Display Interfaces</b>	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
<b>Network Interface</b>	10/100/1000Base-TX (integrated in PCH, Intel® i219LM PHY)
<b>Audio Interface</b>	High Definition Audio
<b>Security Device</b>	TPM 2.0
<b>Miscellaneous</b>	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
<b>Feature Highlights</b>	Type 6 pin-out

# COM Express Type 6



<b>Firmware</b>	UEFI Firmware: AMI Aptio® V Security: TPM 1.2 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
<b>OS Support</b>	Windows 10 (embedded) BSP for Linux (Yocto) EAPI (HW Programming Interface)
<b>Power Requirement</b>	Voltage: +12V +/-10%, 5V Stby optional, Power Consumption: 35 W to 55 W (typ.)
<b>Environment</b>	Ambient Temperature; 0° ... 60°C (operating), -25° ... 85°C (storage) Humidity: 5 ... 95% (operating, non-condensing), 5 ... 95% (storage, non-condensing)
<b>Dimensions</b>	125mm x 95mm x 13mm
<b>Certificates</b>	UL / CE

Technical Data for TRIA C6B-KLH

# COM Express Type 6



## Order Reference

Order No.	Description	Reference	Status*
70288	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Core i3-7102E, dual-core, 2.1GHz, 25W TDP; Chipset: HM175; Graphics: integrated Intel HD Gen 9 (GT2); LVDS; 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen 3; 2x socket for DDR4 SO-DIMM.	MSC C6B- KLH-7102E- NN0201C PCBFTX	OR
70304	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Core i3-7100E, dual-core, 2.9GHz, 35W TDP; Chipset: HM175; Graphics: integrated Intel HD Gen 9 (GT2); LVDS; 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen 3; 2x socket for DDR4 SO-DIMM.	MSC C6B- KLH-7100E- NN0201C PCBFTX	OR
70296	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Core i5-7442EQ, quad-core, 2.1/2.9GHz, 25W TDP; Chipset: QM175; Graphics: integrated Intel HD Gen 9 (GT2); LVDS; 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen 3; 2x socket for DDR4 SO-DIMM.	MSC C6B- KLH-7442EQ- NN0201C PCBFTX	OR
70298	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Core i5-7440EQ, quad-core, 2.9/3.6GHz, 45W TDP; Chipset: QM175; Graphics: integrated Intel HD Gen 9 (GT2); LVDS; 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen 3; 2x socket for DDR4 SO-DIMM.	MSC C6B- KLH-7440EQ- NN0201C PCBFTX	OR
70292	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Core i7-7820EQ, quad-core, 3.0/3.7GHz, 45W TDP; Chipset: QM175; Graphics: integrated Intel HD Gen 9 (GT2); LVDS; 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen 3; 2x socket for DDR4 SO-DIMM.	MSC C6B- KLH-7820EQ- NN0201C PCBFTX	OR
70284	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Xeon E3-1505Lv6, quad-core, 2.2/3.0GHz, 25W TDP; Chipset: CM238; Graphics: integrated Intel HD Gen 9 (GT2); LVDS; 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen 3; 2x socket for DDR4 or DDR4ECC SO-DIMM.	MSC C6B- KLH-1505LV6- NN1201C PCBFTX	OR

# COM Express Type 6



Order No.	Description	Reference	Status *
70306	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Xeon E3-1505Mv6, quad-core, 3.0/4.0GHz, 45W TDP, 35W cTDP; Chipset: CM238; Graphics: integrated Intel HD Gen 9 (GT2); LVDS; 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen 3; 2x socket for DDR4 or DDR4ECC SO-DIMM.	MSC C6B- KLH-1505MV6- NN1201C PCBFTX	OR
70302	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Core i3-7102E, dual-core, 2.1GHz, 25W TDP; Chipset: HM175; Graphics: integrated Intel HD Gen 9 (GT1); eDP; 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen 3; 2x socket for DDR4 SO-DIMM.	MSC C6B- KLH-7102E- NN0101C PCBFTX	OR
70286	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Core i3-7100E, dual-core, 2.9GHz, 35W TDP; Chipset: HM175; Graphics: integrated Intel HD Gen 9 (GT2); eDP; 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen 3; 2x socket for DDR4 SO-DIMM.	MSC C6B- KLH-7100E- NN0101C PCBFTX	OR
70290	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Core i5-7442EQ, quad-core, 2.1/2.9GHz, 25W TDP; Chipset: QM175; Graphics: integrated Intel HD Gen 9 (GT2); eDP; 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen 3; 2x socket for DDR4 SO-DIMM.	MSC C6B- KLH-7442EQ- NN0101C PCBFTX	OR
70300	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Core i5-7440EQ, quad-core, 2.9/3.6GHz, 45W TDP; Chipset: QM175; Graphics: integrated Intel HD Gen 9 (GT2); eDP; 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen 3; 2x socket for DDR4 SO-DIMM.	MSC C6B- KLH-7440EQ- NN0101C PCBFTX	OR
70294	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Core i7-7820EQ, quad-core, 3.0/3.7GHz, 45W TDP; Chipset: QM175; Graphics: integrated Intel HD Gen 9 (GT2); eDP; 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen 3; 2x socket for DDR4 SO-DIMM.	MSC C6B- KLH-7820EQ- NN0101C PCBFTX	OR
70282	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Xeon E3-1505Lv6, quad-core, 2.2/3.0GHz, 25W TDP; Chipset: CM238; Graphics: integrated Intel HD Gen 9 (GT2); eDP; 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen 3; 2x socket for DDR4 or DDR4ECC SO-DIMM.	MSC C6B- KLH-1505LV6- NN1101C PCBFTX	OR

# COM Express Type 6



Order No.	Description	Reference	Status *
70308	COM Express Type 6 Basic module (125mm x 95mm); CPU: Intel Xeon E3-1505MV6, quad-core, 3.0/4.0GHz, 45W TDP, 35W cTDP; Chipset: CM238; Graphics: integrated Intel HD Gen 9 (GT2); eDP; 3x DP/HDMI/DVI; Ethernet: Intel i219 Gbit; HD audio; 4x SATA; 4x USB3/2, 4x USB2; 8x PCIe x1 Gen 3; PEG x16 Gen 3; 2x socket for DDR4 or DDR4ECC SO-DIMM.	MSC C6B- KLH-1505MV6- NN1101C PCBFTX	OR

Ordering Information for TRIA C6B-KLH

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

# COM Express Type 6



## 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
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

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

### Starter Kits

Order No.	Description	Reference
68752	Starterkit for COM Express Type 6 modules TRIA C6B-SLH with Intel 6th generation Core processors. Consists of Mini-ITX platform board, suitable Heatsink with fan and two DDR4 memory modules. Please order separately the COM Express C6B-SLH module of your choice.	MSC C6-SK-SLH-EV- KIT001 SETPAC

Starter Kits for TRIA C6B-KLH/SLH

# COM Express Type 6



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