

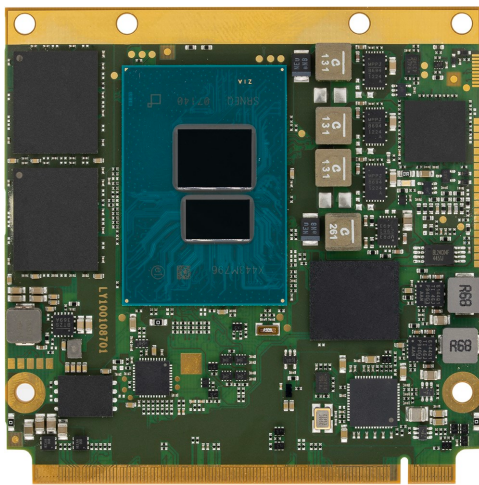
TRIA Q7-ASL

Intel® Atom® Processors x7000RE/C Series

70 x 70 mm

11/ 19 W

-40 +85 °C



Q S E V E N



Highlights

- Up to eight processing cores
- Power efficient processors, TDP 6 to 12W
- Integrated Intel UHD Gen.12 graphics, max. 32 executing units
- Up to 16GB LPDDR5 SDRAM, In-band ECC
- Up to 256GB eMMC 5.1 Flash (optional)
- 2x SATA-III interface (6Gbps)
- 1x DP++
- LVDS / Embedded DisplayPort
- Up to 4x PCI Express x1/x2/x4 Gen. 3
- 2x USB 3.1 Host interfaces
- 8x USB 2.0 Host interfaces
- 1x 1/2,5 Gigabit Ethernet (Intel® i226)
- 1x SGMII Interface on SATA-Port1 (optional)
- UART, SPI, I2C, SMBus.
- HD Audio
- Trusted Platform Module TPM 2.0
- Qseven 2.1 compliant

- UEFI Firmware

Technical Data

Technology	x86
Formfactor	Qseven
CPU	Intel Atom® x7835RE, octa-core, 1.3GHz, 32EU, TCC, 12W, IUC, ET Intel Atom® x7433RE, quad-core, 1.5GHz, 32EU, TCC, 9W, IUC, ET Intel Atom® x7213RE, dual-core, 2.0GHz, 16EU, TCC, 9W, IUC, ET Intel Atom® x7211RE, dual-core, 1.0GHz, 16EU, TCC, 6W, IUC, ET Intel Atom® x7405C, quad-core, 2.2GHz, no GPU, TCC, 12W, EUC, CT Intel Atom® x7203C, dual-core, 2.0GHz, no GPU, TCC, 9W, EUC, CT Note: base frequency shown, other frequencies supported ET- Extended temperature CT- Commercial temperature EUC - Intel Embedded Use Conditions IUC - Intel Industrial Use Conditions
Chipset	Integrated in SOC
RAM	Up to 16GB LPDDR5 SDRAM, up to 4800MT/s, IBECC, soldered
Flash	Up to 256GB eMMC 5.1 Flash (optional)
Storage Interfaces	2x SATA-3.2 6Gbps
USB	2x USB 3.2, 6x USB 2.0, 1x Dual Role Port (Host/Device)* or 1x USB 3.2, 8x USB 2.0, 1x Dual Role Port (Host/Device)* *One USB 3.2 port according to Qseven Rev. 2.1 (only SS signals)
Serial Interfaces	1x UART (with RTS/CTS)
Bus Interfaces	Up to 4x PCI-Express x1 Gen. 3 lanes 1x LPC Bus 1x I2C Bus 1x SPI Bus 1x SMBus
Display Controller	Integrated Intel UHD Graphics (Gen12) Up to 32 execution units (EU) Note: only available with the Intel Atom Processor x7000RE Series
Display Interfaces	Three independent displays supported 1x DP++ 1x eDP 1.4b (1x DP) / 1x dual channel LVDS Dual-Channel LVDS 24/18 bit up to 1920 x 1200 @ 60Hz or 2x Embedded DisplayPort 1.4b up to 4096 x 2160 @ 60Hz
Network Interface	1x 10/100/1000Base-T, up to 2.5Gbps based on Intel i226 with TSN support 1x SGMII Interface on SATA-Port1 (optional)
Audio Interface	High Definition Audio
Security Device	Infineon Trusted Platform Module 2.0 (optional)
Miscellaneous	Watchdog Timer: Initiates system reset, (programmable, 1s ... 255h) Fan Supply: PWM Speed Control for system fan on carrier board RTC battery: external System Monitoring: Voltage, Temperature, CPU Fan, System Fan
Feature Highlights	Qseven Rev.2.1 compliant

Firmware	AMI Aptio UEFI
OS Support	Windows 10 LTSC Windows 11 LTSC Yocto Project (LTS kernel 2021)
Power Requirement	+5V +/-5% +5V Standby
Environment	Temperature Range: 0° ... 60°C (operating) -25° ... 85°C (storage) -40° ... 85°C (operating industrial) Humidity: 5 ... 95% (operating, non-condensing) 5 ... 95% (storage, non-condensing)
Dimensions	70 x 70 mm
Certificates	UL / CE
Cooling	Heatspreader Heatsink
Carrier	TRIA Q7-MB-EP5 TRIA Q7-MB-EP6

Technical Data for TRIA Q7-ASL

Order Reference

Order No.	Description	Reference	Status*
121825	Qseven 2.1 module with Intel Atom x7835RE, Octa-Core (1.3GHz), 12W, TCC, 16GB LPDDR5 (4800 MT/s), 32EU, 64GB eMMC, 2x SATA, 1x 2.5GbE LAN, 2x USB 3.2, 6x USB 2.0 (1x Host/Device), TPM 2.0, eDP, IUC (Industrial use conditions), industrial temperature -40°C...+85°C	MSC Q7-ASL-X7835RE-46N0111I PCBFTX	PV
121821	Qseven 2.1 module with Intel Atom x7433RE, Quad-Core (1.5GHz), 9W, TCC, 8GB LPDDR5 (4800 MT/s), 32EU, 64GB eMMC, 1x SATA, SGMII on SATA0, 1x 2.5GbE LAN, 2x USB 3.2, 6x USB 2.0 (1x Host/Device), TPM 2.0, LVDS, IUC (Industrial use conditions), industrial temperature -40°C...+85°C	MSC Q7-ASL-7433RE-36N0291I PCBFTX	PV
121823	Qseven 2.1 module with Intel Atom x7433RE, Quad-Core (1.5GHz), 9W, TCC, 4GB LPDDR5 (4800 MT/s), 32EU, no eMMC, 2x SATA, 1x 2.5GbE LAN, 2x USB 3.2, 6x USB 2.0 (1x Host/Device), TPM 2.0, LVDS, IUC (Industrial use conditions), industrial temperature -40°C...+85°C	MSC Q7-ASL-X7433RE-2NN021I PCBFTX	PV

Ordering Information for TRIA Q7-ASL

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

Accessories

Carrier Options

Order No.	Description	Reference
67690	Qseven Rev. 2.0 compatible embedded platform (148 x 102mm), 10-28V input voltage, 1x RS232 on DB9 connector, 1x RS485 on pin header, 1x RS232 no handshake on pin header, dual RJ45 LAN connector with LED, 1x SATA, 1x mSATA slot, SD card holder, 1x USB 3.0 connector, 2x USB 2.0 connector, 1x USB 2.0 on pin row, 1x microUSB 2.0 OTG, CAN, I2C, LPC/ GPIO on pin header, I2C/SMBus, SPI, DisplayPort connector, LVDS/eDP on JLI30 connector, regulated backlight supply, mini PCI Express slot, HD Audio, CMOS battery. Commercial temperature range 0..+70°C	MSC Q7-MB-EP6-601 PCBFTX

Carrier Options for TRIA Q7-EL/AL/BT/BW

Cooling Options

Order No.	Description	Reference
118185	Passive Heatsink for Q7-ALN and Q7-ASL variants, consisting of a single-piece aluminium pin cooler and thermal pad for contact to the processor, with 2.7mm through-hole standoffs	MSC Q7-ASL-01 HSI-001
118186	Heatspreader for Q7-ALN and Q7-ASL variants, consisting of a single-piece aluminium plane and thermal pad for contact to the processor, with 2.7mm through-hole standoffs	MSC Q7-ASL-01 HSP-001
1053769	Heat rail for Q7 baseboards. Recommended for conductive heat transfer from the Q7 module to the Q7 baseboard. Already assembled on all MSC baseboards.	MSC Q7-XXX-01 HTR-001

Cooling Options for TRIA Q7-ASL

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