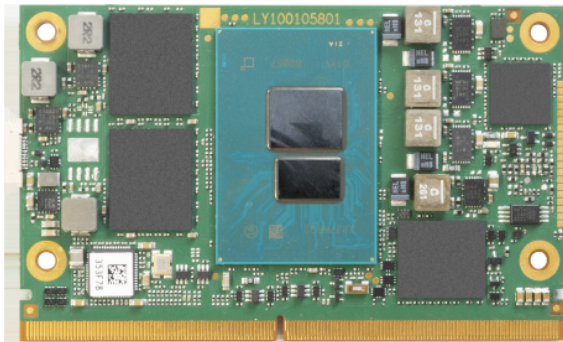


TRIA SM2S-ASL

Intel® Atom® Processors x7000RE/C Series

82 x 50 mm



8 / 17 W

-40 +85 °C



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)
- SATA-III interface (6Gbps)
- 2x DP++
- LVDS / Embedded DisplayPort and MIPI-DSI
- Triple Independent Display support
- 2x MIPI-CSI Camera Interface
- Up to 4x PCI Express x1/x2/x4 Gen. 3
- 2x USB 3.2 Gen2 (up to 10Gb/s)
- 6x USB 2.0
- 2x 1/2,5 Gigabit Ethernet (Intel® i226)
- 1x SGMII Interface on PCIE-D
- UART, SPI, I2C, SMBus .
- HD/I2S Audio
- Trusted Platform Module TPM 2.0
- SMARC 2.1.1 compliant
- UEFI Firmware

Technical Data

Technology	x86
Formfactor	SMARC® 2.1.1 Short Size
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 32GB LPDDR5 SDRAM, up to 4800MT/s, IB ECC, soldered
Flash	Up to 256GB eMMC V5.1 Flash, soldered (optional)
Storage Interfaces	1x SATA-III 6Gbps
USB	2x USB 3.2 Gen2 (up to 10Gb/s) 6x USB 2.0
Serial Interfaces	4x UART (two with handshake)
Bus Interfaces	Up to 4x PCI-Express x1 Gen. 3 lanes 1x I2C Bus 1x SPI Bus (Boot) 1x SPI Bus (general purpose)/ eSPI (optional) 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 2x DP++ Dual-Channel LVDS 24/18 bit up to 1920 x 1200 @ 60Hz or Embedded DisplayPort 1.4b up to 4096 x 2304 @ 60Hz and MIPI-DSI x4 Interface up to 4096 x 2160 @ 60Hz (optional) Note: display interfaces are only available with the Intel Atom Processor x7000RE Series
Network Interface	2x 10/100/1000Base-T, up to 2.5Gbps based on Intel i226 with TSN support 1x SGMII (up to 2.5Gbps) Interface on PCIe-D
Audio Interface	High Definition Audio and I2S Audio or 2x I2S Audio
Security Device	Infineon Trusted Platform Module 2.0
Miscellaneous	MIPI CSI-2 camera interface (CSI0, 2 lane) MIPI CSI-2 camera interface (CSI1, 4 lane) 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	SMARC™ 2.1.1 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: Commercial: 0° ... 60°C (operating) Industrial: -40° ... 85°C (operating) -25° ... 85°C (storage) Humidity: 5 ... 95% (operating, non-condensing) 5 ... 95% (storage, non-condensing)
Dimensions	82 x 50 mm
Certificates	UL / CE
Cooling	Heatspreader Heatsink
Carrier	TRIA SM2-MB-EP1

Technical Data for TRIA SM2S-ASL

Order Reference

Order No.	Description	Reference	Status*
114189	SMARC 2.1.1 module with Intel Atom x7835RE, Octa-Core (1.3GHz), 12W, TCC, 16GB LPDDR5 (4800 MT/s), 32EU, 32GB eMMC, no PCIe4, PCIe/ SGMII on PCIe_D, SATA, 2x 2.5GbE LAN, 2x USB 3.2, 6x USB 2.0, TPM 2.0, eDP, IUC (Industrial use conditions), industrial temperature -40°C...+85°C	MSC SM2S-ASL-x7835RE-45N01911 PCBFTX	PV
114191	SMARC 2.1.1 module with Intel Atom x7433RE, Quad-Core (1.5GHz), 9W, TCC, 8GB LPDDR5 (4800 MT/s), 32EU, 32GB eMMC, PCIe4, no SATA, 2x 2.5GbE LAN, 2x USB 3.2, 6x USB 2.0, TPM 2.0, LVDS, IUC (Industrial use conditions), industrial temperature -40°C...+85°C	MSC SM2S-ASL-x7433RE-35N02811 PCBFTX	PV
114193	SMARC 2.1.1 module with Intel Atom x7213RE, Dual-Core (2.0GHz), 9W, TCC, 8GB LPDDR5 (4800 MT/s), 16EU, 16GB eMMC, no PCIe4, PCIe/ SGMII on PCIe_D, SATA, 2x 2.5GbE LAN, 2x USB 3.2, 6x USB 2.0, TPM 2.0, LVDS, IUC (Industrial use conditions), industrial temperature -40°C...+85°C	MSC SM2S-ASL-x7213RE-34N02911 PCBFTX	PV
114195	SMARC 2.1.1 module with Intel Atom x7211RE, Dual-Core (1.0GHz), 6W, TCC, 4GB LPDDR5 (4800 MT/s), 16EU, 16GB eMMC, no PCIe4, PCIe/ SGMII on PCIe_D, SATA, 2x 2.5GbE LAN, 2x USB 3.2, 6x USB 2.0, TPM 2.0, LVDS, IUC (Industrial use conditions), industrial temperature -40°C...+85°C	MSC SM2S-ASL-x7211RE-24N02911 PCBFTX	PV
114197	SMARC 2.1.1 module with Intel Atom x7203C, Dual-Core (2.0GHz), 9W, TCC, 4GB LPDDR5 (4800 MT/s), 16GB eMMC, no PCIe4, PCIe/SGMII on PCIe_D, SATA, 2x 2.5GbE LAN, 2x USB 3.2, 6x USB 2.0, TPM 2.0, no Graphics, EUC (Embedded use conditions), commercial temperature 0°C...+ 60°C	MSC SM2S-ASL-x7203C-24N0N91C PCBFTX	OR
116344	SMARC 2.1.1 module with Intel Atom x7405C, quad-core, 12W TDP, 8GB LPDDR5 (4800MT/s), no eMMC, PCIe/SGMII on PCIe_D, SATA, 2x 2.5GbE LAN, 2x USB 3.1, 6x USB 2.0 Host, no TPM, no Graphics, EUC/CUC (Embedded and Communication Use Conditions), standard temperature 0...+60°C	MSC SM2S-ASL-x7405C-3NN01N0C PCBFTX	PV
116559	SMARC 2.1.1 module with Intel Atom x7835RE, Octa-Core (1.3GHz), 12W, TCC, 16GB LPDDR5 (4800 MT/s), 32EU, 128GB eMMC, 1x PCIe2, 1x PCIe1, 1x PCIe1/SGMII on PCIe_D, SATA, 2x 2.5GbE LAN, 2x USB 3.1, 6x USB 2.0, TPM 2.0 (SLB9672), eDP, IUC (Industrial use conditions), extended temperature -25°C...+85°C	MSC SM2S-ASL-x7835RE-47N0191E PCBFTX	PV
119559	SMARC 2.1.1 module with Intel Atom x7433RE, Quad-Core (1.5GHz), 9W, TCC, 16GB LPDDR5 (4800 MT/s), 32EU, 64GB eMMC, no PCIe4, PCIe/SGMII on PCIe_D, SATA, 2x 2.5GbE LAN, 2x USB 3.1, 6x USB 2.0, TPM 2.0, eDP, IUC (Industrial use conditions), industrial temperature -40°C...+85°C	MSC SM2S-ASL-x7433RE-46N01911 PCBFTX	PV

Ordering Information for TRIA SM2S-ASL

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

Accessories

Cooling Options

Order No.	Description	Reference
98357	Passive Heatsink for SM2S-ALN and SM2S-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 SM2S-ALN-01 HSI-001
98358	Heatspreader for SM2S-ALN and SM2S-ASL variants, consisting of a single-piece aluminium plane and thermal pad for contact to the processor, with 2.7mm through-hole standoffs	MSC SM2S-ALN-01 HSP-001

Cooling Options TRIA SM2S-ASL

Carrier Options

Order No.	Description	Reference
68488	SMARC 2.0 Embedded Platform with PCI Express x4 slot, GbE, SATA, USB 3.0, USB 2.0, USB 2.0 OTG, RS232, CAN, SPI, eSPI, SMBus, I2C and GPIO interface, LVDS/eDP, DisplayPort and HDMI display interface, regulated backlight supply, HD/12S audio interface, MIPI CSI-2 camera interface, mini PCI Express card slot, SD card slot, fan connector, CMOS battery, Mini-ITX form factor (170 x 170 mm), ATX power connector and single 12V/24V power jack, commercial temperature range 0..+70°C	MSC SM2-MB-EP1-001 PCBFTX
85087	SMARC 2.x compatible embedded platform (146 x 80mm), 10-36V input voltage, 3x RS232, 1x RS485, dual RJ45 LAN with LED (1 x LAN i210), 1x M.2 2280 Key M slot, mPCIe slot, 1x USB 3.0 Type A, 1x USB 3.0/ DisplayPort Type C , 1x USB 2.0 Type A, 1x USB 2.0 internal, 1x µUSB 2.0 Host/Device, 2x SPI, I ² C, 12 GPIO on FC, 1x DisplayPort++ , LVDS/ eDP/DSI on J1LI30 connector, µSD Card Slot, regulated backlight supply, HD Audio with amplifier, system fan connector, camera connector, RTC battery. Industrial temperature range -40..+85°C, x86 full version	MSC SM2S-MB-EP5-001 PCBFTX
83979	SMARC 2.x compatible embedded platform (146 x 80mm), 12V input voltage, 3x RS232, 1x RS485, dual RJ45 LAN with LED, 1x M.2 2280 Key M slot , 1x USB 2.0 Type A, 1x USB3.0 Type A, 1x USB 2.0 internal, 1x µUSB 2.0 Host/Device, 2x SPI, 12 GPIO on FC, 1x DisplayPort++ , LVDS/eDP/DSI on J1LI30 connector, regulated backlight supply, RTC battery, Industrial temperature range -40..+85°C, x86 slim version	MSC SM2S-MB-EP5-003 PCBFTX

Carrier Options TRIA SM2S-ASL/ALN/EL/AL/RYZ

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