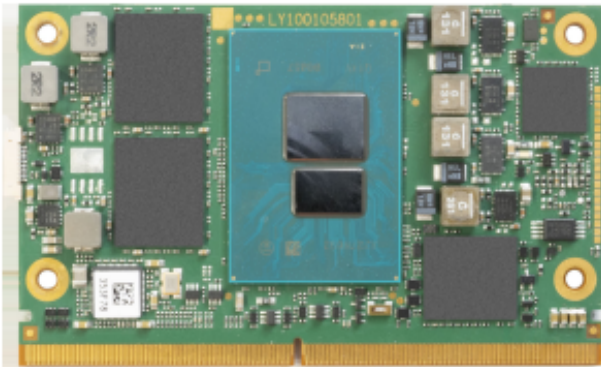


TRIA SM2S-ALN

Intel Atom® processors x7000E Intel® Core™ i3 processor Intel® Processors N Series



82 x 50 mm

8 / 17 W

0 +60 °C



Highlights

- Up to eight processing cores
- Power efficient processors, TDP 6 to 15W
- Integrated Intel UHD Gen.12 graphics, max. 32 executing units .
- Up to 32GB LPDDR5 SDRAM (IB ECC for Atom SKU's)
- 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 Gigabit Ethernet (Intel® i226)
- 1x SGMII Interface on PCIE-D (opt. only Atom SKU's)
- UART, SPI, I2C, SMBus
- HD/I2S Audio
- Trusted Platform Module
- SMARC 2.1.1 compliant
- UEFI Firmware

Technical Data

Technology	x86
Formfactor	SMARC™ 2.1.1 Short Size
CPU	Intel® Core™ i3-N355, eight-core, 1.0GHz/1.9GHz, 32EU, 9/15W, PUC Intel® Core™ i3-N305, eight-core, 1.0GHz/1.8GHz, 32EU, 9/15W, PUC Intel Atom® x7425E, four-core, 1.5GHz, 24EU, TCC, 12W, EUC Intel Atom® x7213E, two-core, 1.7GHz, 16EU, TCC, 10W, EUC Intel Atom® x7211E, two-core, 1.0GHz, 16EU, TCC, 6W, EUC Intel® Processor N250, quad-core, 1.3GHz, 32EU, 6W, PUC Intel® Processor N200, quad-core, 1.0GHz, 32EU, 6W, PUC Intel® Processor N150, quad-core, 0.8GHz, 24EU, 6W, PUC Intel® Processor N97, quad-core, 2.0GHz, 24EU, 12W, PUC Intel® Processor N50, dual-core, 1.0GHz, 16EU, 6W, PUC EUC - Intel Embedded Use Conditions PUC - Intel PC Client Use Conditions
Chipset	Integrated in SOC
RAM	Up to 32GB LPDDR5 SDRAM, up to 4800MT/s, IB ECC (only Atom SKU's), 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)
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 1920 x 1080 @ 60Hz (optional)
Network Interface	2x 10/100/1000Base-T, up to 2.5G based on Intel i226 1x SGMII Interface on PCIe-D (opt. only Atom SKU's)
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) -20° ... 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-ALN

Order Reference

Order No.	Description	Reference	Status*
114166	SMARC 2.1.1 module with Intel Core i3-N305, Octa-Core (1.0/1.8GHz), 9-15W, 16GB LPDDR5 (4800MT/s), no eMMC, 4x PCIe1, SATA, 2x 2.5GbE LAN, 2x USB 3.2, 6x USB 2.0 Host, TPM 2.0, LVDS, PUC (PC Client Use Conditions), standard temperature 0...+60°C	MSC SM2S-ALN-N305-4NN0291C PCBFTX	PV
114170	SMARC 2.1.1 module with Intel Processor N97, Quad-core (2.0 GHz), 12W, 8GB LPDDR5 (4800MT/s), 32GB eMMC, 4x PCIe1, SATA, 2x 2.5GbE LAN, 2x USB 3.2, 6x USB 2.0 Host, TPM 2.0, LVDS, PUC (PC Client Use Conditions), standard temperature 0...+60°C	MSC SM2S-ALN-N97-35N0291C PCBFTX	PV
114168	SMARC 2.1.1 module with Intel Processor N50, Dual-core (1.0 GHz), 6W, 4GB LPDDR5 (4800MT/s), 16GB eMMC, 4x PCIe1, SATA, 2x 2.5GbE LAN, 2x USB 3.2, 6x USB 2.0 Host, TPM 2.0, LVDS, PUC (PC Client Use Conditions), standard temperature 0...+60°C	MSC SM2S-ALN-N50-24N0291C PCBFTX	PV
114186	SMARC 2.1.1 module with Intel Atom x7425E, Quad-Core (1.5 GHz), 12W, TCC, 16GB LPDDR5 (4800MT/s), no eMMC, PCIe4, no SATA, 2x 2.5GbE LAN, 2x USB 3.2, 6x USB 2.0 Host, TPM 2.0, LVDS, EUC (Embedded use conditions), standard temperature 0...+60°C	MSC SM2S-ALN-x7425E-4NN0281C PCBFTX	PV
114184	SMARC 2.1.1 module with Intel Atom x7213E, Dual-Core (1.7 GHz), 10W, TCC, 4GB LPDDR5 (4800MT/s), 16GB eMMC, no PCIe4, PCIe/SGMII on PCIe_D, SATA, 2x 2.5GbE LAN, 2x USB 3.2, 6x USB 2.0 Host, TPM 2.0, LVDS, EUC (Embedded use conditions), standard temperature 0...+ 60°C	MSC SM2S-ALN-x7213E-24N0291C PCBFTX	PV
114182	SMARC 2.1.1 module with Intel Atom x7211E, Dual-Core (1.0 GHz), 6W, TCC, 4GB LPDDR5 (4800MT/s), 16GB eMMC, no PCIe4, PCIe/SGMII on PCIe_D, SATA, 2x 2.5GbE LAN, 2x USB 3.2, 6x USB 2.0 Host, TPM 2.0, LVDS, EUC (Embedded use conditions), standard temperature 0...+ 60°C	MSC SM2S-ALN-x7211E-24N0291C PCBFTX	PV

Ordering Information for TRIA SM2S-ALN

*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-ALN

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/I2S 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 JLI30 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 JLI30 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/RYZ

Tria Technologies GmbH
 Industriestr. 16
 76297 Stutensee
info@tria-technologies.com
tria-technologies.com

Copyright © 2024 Tria Technologies GmbH. All data is for information purposes only and is subject to change without notice. No guarantee for legal purposes is implied. Information in this document has been carefully checked, however, no responsibility for inaccuracies has to be assumed. All brand or product names may be trademarks and property of their respective owners.