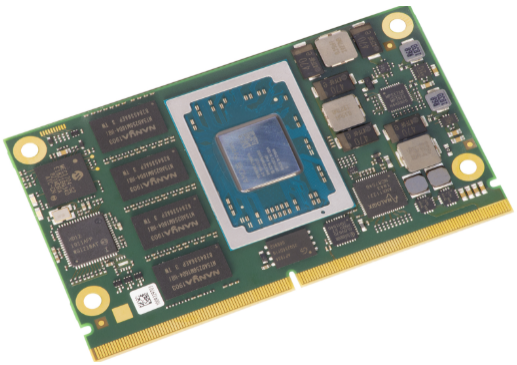
TRIA SM2S-RYZ

AMD Ryzen™ Embedded V/R-Series



82 x 50 mm

6 / 15 W

-40 +85 °C

Highlights

- AMD Ryzen™ Embedded V1404I, quad-core (8 threads) 2.0/3.6GHz, 15W (12-25W)
- AMD Ryzen™ Embedded R1606G, dual-core (4 threads) 2.6/3.5GHz, 15W (12-25W)
- AMD Ryzen™ Embedded R1505G, dual-core (4 threads) 2.4/3.3GHz, 15W (12-25W)
- AMD Ryzen™ Embedded R1305G, dual-core (4 threads) 1.5/2.8GHz, 8W (8-10W)
- AMD Ryzen™ Embedded R1102G, dual-core (2 threads) 1.2/2.6GHz, 6W
- Integrated AMD Vega GPU with up to 8 Compute Units
- Up to 8GB DDR4 2400MT/s SDRAM
- Up to 64GB eMMC Flash
- SATA-III interface (6Gbps)
- Dual DisplayPort++ interface
- LVDS / Embedded DisplayPort
- Dual/Triple/Quad Independent Display support up 4k resolution (SKU related)
- Up to 4x PCI Express x1 Gen. 3
- 2x USB 3.0 Host interfaces
- 4x USB 2.0 Host interfaces
- Up to 2x Gigabit Ethernet
- UART, SPI, I2C, SMBus, HD Audio
- Trusted Platform Module (optional)
- SMARC 2.1 compliant

Technical Data

Technology	x86
Formfactor	SMARC™ Short Size
CPU	AMD Ryzen™ Embedded V1404I, quad-core (8 threads) 2.0/3.6GHz, 15W (12-25W) AMD Ryzen™ Embedded R1606G, dual-core (4 threads) 2.6/3.5GHz, 15W (12-25W) AMD Ryzen™ Embedded R1505G, dual-core (4 threads) 2.4/3.3GHz, 15W (12-25W) AMD Ryzen™ Embedded R1305G, dual-core (4 threads) 1.5/2.8GHz, 8W (8-10W) AMD Ryzen™ Embedded R1102G, dual-core (2 threads) 1.2/2.6GHz, 6W
Chipset	Integrated in SOC
RAM	Up to 8GB 2400MT/s DDR4 SDRAM
Flash	Up to 64GB eMMC V5.0 Flash, soldered (optional)
Storage Interfaces	1x SATA-III 6Gbps
USB	4x USB 2.0 Host interfaces 2x USB 3.0 Host interface
Serial Interfaces	4x UART
Bus Interfaces	Up to 4x PCI-Express x1 Gen. 3 lanes 1x I2C Bus 1x SPI Bus 1x SMBus
Display Controller	AMD Vega GPU with up to 8 Compute Units – up to 1200 MHz Up to 4 independent displays supported (depending on processor variant)
Display Interfaces	2 x DisplayPort++ Dual-channel LVDS / 2 x eDP 1.4 Up to 4x Digital Display Interfaces with up to 4k (3840 x 2160) resolution
Network Interface	Up to 2x 10/100/1000Base-T (Intel i210)
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	SMARC™ 2.1 compliant
Firmware	AMI Aptio UEFI
OS Support	Windows 10, Windows 10 IoT Linux, Yocto EAPI (HW Programming Interface)
Power Requirement	+5V +/-5%

Environment	Temperature Range: 0° ... 60°C (operating) -25° ... 85°C (storage) -40° ... 85°C (operating industrial, only with V1404I CPU) 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-RYZ

Order Reference

Order No.	Description	Reference	Status*
87402	SMARC 2.1.1 short size module with AMD Ryzen V1404I (2.0/3.6 GHz), Quad-Core, 15W, 8GB 2400MT/s DDR4, 32 GB eMMC, 1x GbE LAN, 2x USB 3.0 Host, 4x USB 2.0 Host, 2x DP++, LVDS Graphics, industrial temperature -40...+85°C	MSC SM2S-RYZ-V1404I-35N0200I PCBFTX	PV
87404	SMARC 2.1.1 short size module with AMD Ryzen V1404I (2.0/3.6 GHz), Quad-Core, 15W, 8GB 2400MT/s DDR4, no eMMC, 1x GbE LAN, 2x USB 3.0 Host, 4x USB 2.0 Host, 2x DP++, LVDS Graphics, industrial temperature -40...+85°C	MSC SM2S-RYZ-V1404I-3NN0200I PCBFTX	PV
87400	SMARC 2.1.1 short size module with AMD Ryzen V1404I (2.0/3.6 GHz), Quad-Core, 15W, 4GB 2400MT/s DDR4, no eMMC, 1x GbE LAN, 2x USB 3.0 Host, 4x USB 2.0 Host, TPM, 2x DP++, 2x eDP Graphics, industrial temperature -40...+85°C	MSC SM2S-RYZ-V1404I-2NN0401I PCBFTX	PV
87394	SMARC 2.1.1 short size module with AMD Ryzen R1102G (1.2/ 2.6GHz), Dual-Core, 6W, 4GB 2400MT/s DDR4, 32GB eMMC, 1x GbE LAN, 2x USB 3.0 Host, 4x USB 2.0 Host, 1x DP++, eDP Graphics, standard temp. 0°C -70°C	MSC SM2S-RYZ-R1102G-25N0100C PCBFTX	PV
87396	SMARC 2.1.1 short size module with AMD Ryzen R1102G (1.2/ 2.6GHz), Dual-Core, 6W, 4GB 2400MT/s DDR4, 32GB eMMC, 1x GbE LAN, 2x USB 3.0 Host, 4x USB 2.0 Host, 1x DP++, LVDS Graphics, standard temp. 0°C -70°C	MSC SM2S-RYZ-R1102G-25N0200C PCBFTX	PV
87398	SMARC 2.1.1 short size module with AMD Ryzen R1102G (1.2/ 2.6GHz), Dual-Core, 6W, 8GB 2400MT/s DDR4, no eMMC, 1x GbE LAN, 2x USB 3.0 Host, 4x USB 2.0 Host, 1x DP++, LVDS Graphics, standard temp. 0°C -70°C	MSC SM2S-RYZ-R1102G-3NN0200C PCBFTX	PV

Ordering Information for TRIA SM2S-RYZ

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

Accessories

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, I²C, 12 GPIO on FC, 1x DisplayPort++ , LVDS/ eDP/DSI on JILI30 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 JILI30 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

Cooling Options

Order No.	Description	Reference
84348	Passive Heatsink for SM2S-RYZ module, consisting of a single-piece aluminum pin cooler and thermal pad for contact to the processor, with 2.7mm through-hole standoffs	MSC SM2S-RYZ-01 HSI-001
84350	Heatspreader for SM2S-RYZ module, consisting of a single-piece aluminum plane and thermal pad for contact to the processor, with 2.7mm through-hole standoffs	MSC SM2S-RYZ-01 HSP-001

Cooling Options for TRIA SM2S-RYZ

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

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