TRIA™
AN AVNET COMPANY



ULTRA COMPACT, HIGH PERFORMANCE TRIA × NXP OSM MODULES

NXP Platinum Partner

May / 2026

TRIA AND NXP®

ENTRUST. EMPOWER. EMBED.

The world's biggest brands trust Tria to build embedded compute and systems for their products, getting them to market faster, better and stronger. From coffee machines to farming equipment, Tria's intelligent computing is powering the future. If you're building your next great product.

Available wherever you do business

Tria's modules, systems and services are available worldwide through the Avnet distribution network. OEMs can incorporate Tria technology into their manufacturing workflow quickly and easily with Avnet's world-class logistics and supply chain integration.



NXP® PLATINUM PARTNER

Tria is a proud Platinum Partner of **NXP® Semiconductors**, a global leader in automotive, industrial IoT, mobile, and communication infrastructure markets. Our collaboration combines NXP®'s advanced processing capabilities with Tria's expertise in embedded compute modules, delivering high performance, scalable solutions for diverse applications. Together, we are dedicated to accelerating breakthrough technologies that advance our world.

NXP Platinum Partner

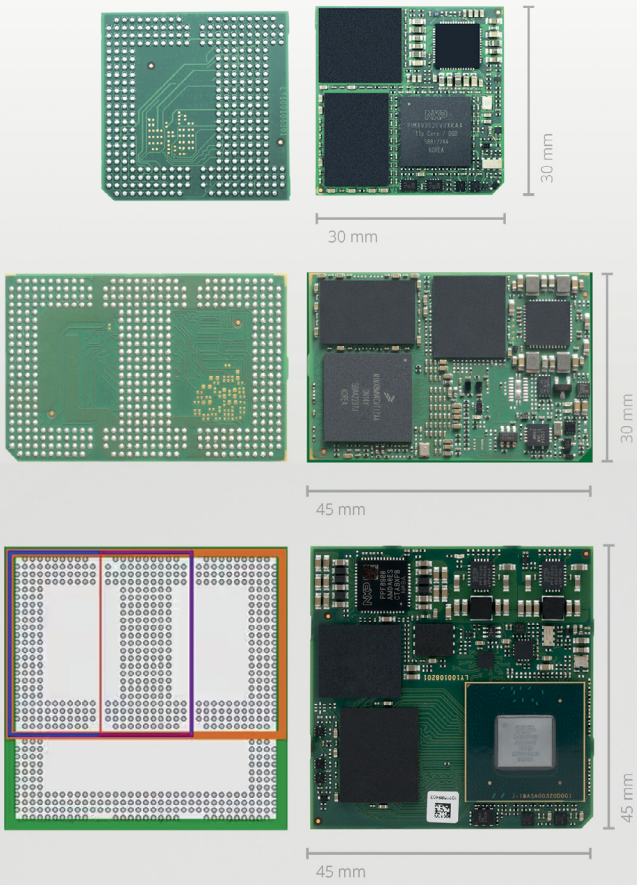
Tria offers the largest portfolio of **OSM** modules featuring NXP's i.MX Applications Processors, including the i.MX95, i.MX 93, i.MX 91, i.MX 8M Plus, i.MX 8M Nano and i.MX 8M Mini series. These modules excel in performance, scalability, and energy efficiency, ideal for compact applications like smart factories, gateway solutions and connected vehicles.

Tria is a founding member of the Standardization Group for Embedded Technologies e.V., or SGeT, the organization that manages the OSM design standard.

Together with the other member organizations, Tria and SGeT maintain OSM as an open standard, empowering OEMs to take advantage of a powerful, well-researched standard that is future-proofed and versatile.

OSM

OPEN STANDARD MODULE ™



The idea of all Open Standard Modules™ (OSM) is to create a new, **futureproof**, and **versatile standard** for small, low cost embedded computer modules that combines the following key features:

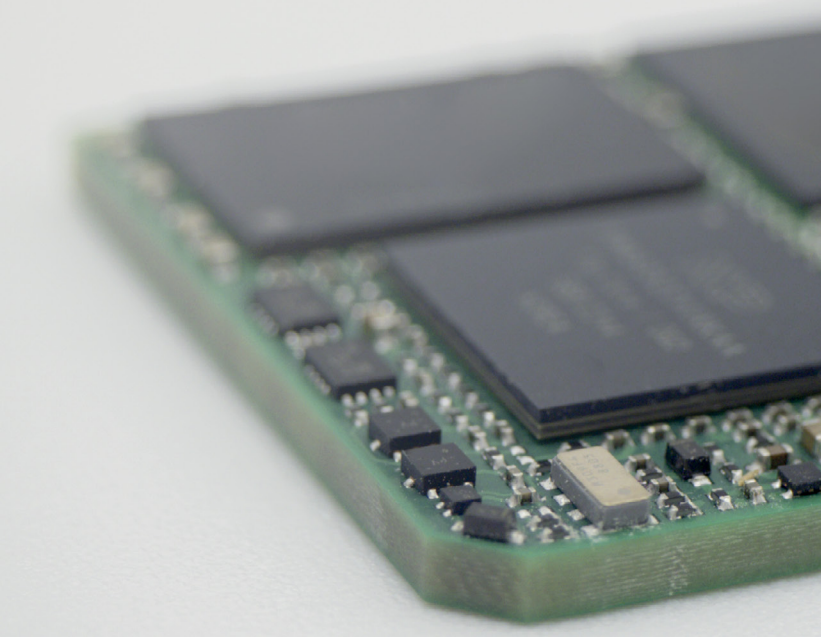
- Fully automated processing for soldering, assembly and testing
- Pre-tinned LGA package for direct PCB soldering without connectors
- Predefined hardware interfaces
- Robust (shock, vibration)

For a growing number of IoT applications, this standard helps to combine the advantages of modular embedded computing with the increasing demands on cost, space and interfaces.

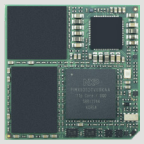
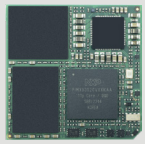
OSM format	Dimensions	Pins
Size-S (small)	30 x 30 mm	332
Size-M (medium)	45 x 30 mm	476
Size-L (large)	45 x 45 mm	662

OSM modules are notably smaller than previous alternatives. Even the largest OSM module, at 45x45mm, is 28% smaller than the Qseven (40x70mm) standard and 51% smaller than SMARC (82x50mm).

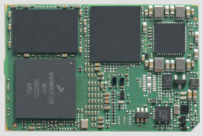
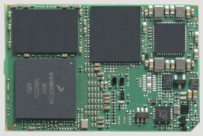
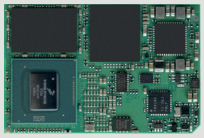
This reduction in size is enabled by solder- on design without any connector, allowing for more interfaces on a smaller footprint. This advancement in miniaturization addresses the growing complexity of requirements, establishing the OSM standard as a pioneering solution.



OSM SIZE-S OVERVIEW

Specs	TRIA OSM-SF-IMXRT1170	TRIA OSM-SF-IMX91	TRIA OSM-SF-IMX93
Technology	**Arm®**	**Arm®**	**Arm®**
			
Form Factor	OSM 1.1 standard (Size-S), Dimension: 30 mm x 30 mm OSM-SF, 322 Pin, RM 1,25 mm	OSM 1.1 standard (Size-S), Dimension: 30 mm x 30 mm OSM-SF, 322 Pin, RM 1,25 mm	OSM 1.1 standard (Size-S), Dimension: 30 mm x 30 mm OSM-SF, 322 Pin, RM 1,25 mm
CPU	**NXP® i.MX 91 RT1170 CROSSOVER MCUs with up to 1GHz** • i.MX RT1170 • i.MX RT1171 • i.MX RT1172 • i.MX RT1173 • i.MX RT1175 • i.MX RT1176	**NXP® i.MX 91 Arm® Cortex®-A55 Applications Processor** • i.MX 9131, single-core, 1.4GHz	**NXP® i.MX 93 Arm® Cortex®-A55 Applications Processors** • i.MX 9352, dual-core, NPU, 1.5 - 1.7GHz • i.MX 9332, dual-core, 1.5 - 1.7GHz • i.MX 9351, single-core, NPU, 1.5 - 1.7GHz • i.MX 9331, single-core, 1.5 - 1.7GHz Arm® Cortex®-M33 Real Time Processor at 250MHz Arm Ethos-U65 microNPU with 256 MACs/Cycle
DRAM	Up to 2 MB SRAM (internal) + optional HyperRAM™ with up to 64MB	Up to 2GB 2400MT/s LPDDR4 SDRAM, soldered, inline ECC support	Up to 2GB 3700MT/s LPDDR4 SDRAM, soldered, inline ECC support
Flash	Up to 256MB QUAD SPI NOR Flash	Up to 256GB eMMC Flash	Up to 256GB eMMC Flash
Storage Interfaces	1x eMMC/SD	2x MMC/SD/SDIO	2x MMC/SD/SDIO
USB	1x USB 2.0 Host/Client, 1x USB 2.0 Host	1x USB 2.0 Host/Client, 1x USB 2.0 Host	1x USB 2.0 Host/Client, 1x USB 2.0 Host
Bus Interfaces	up to 2x I2C 2x SPI (with two chip selects) up to 2x CAN-FD /CAN 2.0B	2x I2C up to 400 Kbit/s 2x CAN-FD / CAN 2.0B 2x SPI (with two chip selects)	2x I2C up to 400 Kbit/s 2x CAN-FD / CAN 2.0B 2x SPI (with two chip selects)
IO Interfaces	24x GPIO, configurable as input or output, 14x configurable as FlexIO up to 2x ADC inputs (12-bit) up to 6x PWM	20x GPIO, configurable as input or output 2x PWM 2x Analog In (12-bit)	20x GPIO, configurable as input or output 2x PWM 2x Analog In (12-bit)
Display Controller	2D GPU with Vector Graphics Acceleration	not available	Pixel processing pipeline (PXP) engine to support 2D image processing (i.e. Blending/Composition, Rotation, Resize, Color Space Conversion)
Display Interfaces	1x MIPI-DSI Display Interface	not available	MIPI-DSI Display Interface, 4 lanes, up to 1920x1080
Network Interface	1x Gb Ethernet (RGMII interface) 1x 100 Mbit Ethernet (RMII interface)	2x Gb Ethernet (RGMII interface)	2x Gb Ethernet (RGMII interface)
Audio Interface	1x I2S Audio	1x I2S Audio	2x I2S Audio
Security Device	Integrated advanced security, safety and reliability. Optional SE050 Secure Element	Integrated advanced security, safety and reliability	Integrated advanced security, safety and reliability
OS Support	NXP's MCUXpresso software and tools	Linux® (Yocto Project®) Android Board Support Package (on request)	Linux® (Yocto Project®) Android Board Support Package (on request)
Power Requirements	Voltage: +5V +/-5% Power Consumption: 1-2 W typ.	Voltage: +5V +/-5% Power Consumption: 2-4 W typ.	Voltage: +5V +/-5% Power Consumption: 2-4 W typ.
Operating Temp.	0° ... 70°C (commercial) -25° ... 85°C (extended) -40° ... 85°C (industrial)	0° ... 70°C (commercial) -25° ... 85°C (extended) -40° ... 85°C (industrial)	0° ... 70°C (commercial) -25° ... 85°C (extended) -40° ... 85°C (industrial)
Humidity	5 ... 95% (operating, non-cond.), 5 ... 95% (storage, non-cond.)		

OSM SIZE-M OVERVIEW

Specs	TRIA OSM-MF-IMX8NANO	TRIA OSM-MF-IMX8MINI	TRIA OSM-MF-IMX8PLUS
Technology	**Arm®**	**Arm®**	**Arm®**
			
Form Factor	OSM 1.1 standard (Size-M), Dimension: 45 mm x 30 mm OSM-MF, 476 Pin, RM 1,25 mm	OSM 1.1 standard (Size-M), Dimension: 45 mm x 30 mm OSM-MF, 476 Pin, RM 1,25 mm	OSM 1.1 standard (Size-M), Dimension: 45 mm x 30 mm OSM-MF, 476 Pin, RM 1,25 mm
CPU	**NXP® i.MX 8M Nano Arm® Cortex®-A53 Applications Processor** • i.MX 8M Nano Solo, single-core, 1.4 - 1.5GHz • i.MX 8M Nano Dual, dual-core, 1.4 - 1.5GHz • i.MX 8M Nano Quad, quad-core, 1.4 - 1.5GHz • i.MX 8M Nano SoloLite, single-core, 1.4 - 1.5GHz • i.MX 8M Nano DualLite, dual-core, 1.4 - 1.5GHz • i.MX 8M Nano QuadLite, quad-core, 1.4 - 1.5GHz Arm® Cortex®-M7 Real Time Processor at 750MHz	**NXP® i.MX 8M Mini Arm® Cortex®-A53 Applications Processor** • i.MX 8M Mini Solo, single-core, 1.6-1.8GHz • i.MX 8M Mini Dual, dual-core, 1.6-1.8GHz • i.MX 8M Mini Quad, quad-core, 1.6-1.8GHz • i.MX 8M Mini SoloLite, single-core, 1.6-1.8GHz • i.MX 8M Mini DualLite, dual-core, 1.6-1.8GHz • i.MX 8M Mini QuadLite, quad-core, 1.6-1.8GHz Arm® Cortex®-M4 Real Time Processor at 400MHz	**NXP® i.MX 8M Plus Arm® Cortex®-A53 Applications Processor** • i.MX 8M Plus Quad: • NPU, ISP, VPU, HIFI4, CAN, 1.6 - 1.8GHz • ISP, VPU, CAN, 1.6 - 1.8GHz • i.MX 8M Plus QuadLite: CAN, 1.6 - 1.8GHz • i.MX 8M Plus Dual: NPU, ISP, VPU, HIFI4, CAN, 1.6 - 1.8GHz Arm® Cortex®-M7 Real Time Processor at 800MHz
DRAM	Up to 1GB 3200MT/s LPDDR4 SDRAM, soldered, non ECC	Up to 4GB 3000MT/s LPDDR4, soldered, non ECC	Up to 8GB 4000MT/s LPDDR4 SDRAM, soldered, inline ECC support
Flash	Up to 256GB eMMC Flash, QSPI NOR Flash (optional)	Up to 256GB eMMC Flash, QSPI NOR Flash (optional)	Up to 256GB eMMC Flash, QSPI NOR Flash (optional)
Storage Interfaces	2x MMC/SD/SDIO	2x MMC/SD/SDIO	2x MMC/SD/SDIO
USB	1x USB 2.0 Host/Client	1x USB 2.0 Host/Client, 1x USB 2.0 Host	1x USB 2.0 Host/Client, 1x USB 3.0 Host
Bus Interfaces	2x I2C up to 400 Kbit/s 2x SPI (with two chip selects)	1x PCI Express® x1 Gen.2 2x I2C up to 400 Kbit/s Up to 2x SPI (with two chip selects)	1x PCI Express® x1 Gen. 3 2x CAN-FD / CAN 2.0B 2x I2C up to 400 Kbit/s 3x SPI (with two chip selects)
IO Interfaces	24x GPIO, configurable as input or output 4x PWM	24x GPIO, configurable as input or output 4x PWM	30x GPIO, configurable as input or output 4x PWM
Display Controller	Vivante GC7000UL 3D GPU	Vivante GC NanoUlta 3D GPU	Vivante GC7000UL 2D/3D GPU
Display Interfaces	1x MIPI-DSI Display Interface, 4 lanes, up to 1920x1080 @ 60fps	1x MIPI-DSI Display Interface, 4 lanes, up to 1920x1080 @ 60fps	1x MIPI-DSI Display Interface, 4 lanes Single-channel LVDS interface, 18 or 24 bit (on RGB Pins)
Network Interface	1x Gb Ethernet (RGMII interface)	1x Gb Ethernet (RGMII interface)	2x Gb Ethernet (RGMII interface)
Audio Interface	1x I2S Audio	2x I2S Audio	2x I2S Audio
Security Device	Integrated advanced security, safety and reliability	Integrated advanced security, safety and reliability	Integrated advanced security, safety and reliability
OS Support	Linux® (Yocto Project®) Android Board Support Package (on request)	Linux® (Yocto Project®) Android Board Support Package	Linux® (Yocto Project®) Android Board Support Package
Power Requirements	Voltage: +5V +/-5% Power Consumption: 2-4 W typ.	Voltage: +5V +/-5% Power Consumption: 2-5 W typ.	Voltage: +5V +/-5% Power Consumption: 2-6 W typ.
Operating Temp.	0° ... 70°C (commercial) - 25° ... 85°C (extended) - 40° ... 85°C (industrial)	0° ... 70°C (commercial) - 25° ... 85°C (extended) - 40° ... 85°C (industrial)	0° ... 70°C (commercial) - 25° ... 85°C (extended) - 40° ... 85°C (industrial)
Humidity	5 ... 95% (operating, non-cond.), 5 ... 95% (storage, non-cond.)		

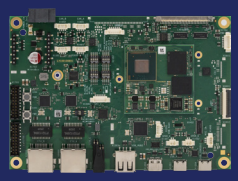
OSM SIZE-L OVERVIEW

Specs	TRIA OSM-LF-IMX95
Technology	Arm®
	
Form Factor	OSM 1.2 standard (Size-L), Dimension: 45 mm x 45 mm OSM-LF, 662 Pin, RM 1,25 mm
CPU	**NXP® i.MX 95 Arm® Cortex®-A55 Applications Processor** • i.MX 95x6, hexa-core, 1.6 - 2.0GHz • i.MX 95x4, quad-core, 1.6 - 2.0GHz • i.MX 95x2, dual-core, 1.6 - 2.0GHz Different versions with options for ISP, NPU, GPU, VPU, Display Controller, 10GbE Arm® Cortex®-M7 Real Time Processor at 800MHz Arm® Cortex®-M33 Real Time Processor at 333MHz NXP eIQ® Neutron NPU with 2.0 TOPS/s
DRAM	Up to 16GB 6400MT/s LPDDR5 SDRAM, soldered, inline ECC support
Flash	Flash Up to 256GB eMMC Flash
Storage Interfaces	2x MMC/SD/SDIO
USB	1x USB 2.0 Host/Client, 1x USB 3.0 Host/Client
Bus Interfaces	2x PCI Express® x1 Gen. 3 5x I2C up to 400 Kbit/s 1x SPI, 1x SPI/QSPI (with two chip selects) 2x CAN-FD / CAN 2.0B
IO Interfaces	24x GPIO, configurable as input or output
Display Controller	Arm Mali Graphics Processing Unit
Display Interfaces	Dual-channel LVDS interface, 18 or 24 bit 1x MIPI-DSI
Network Interface	2x Ethernet (RGMII interface) up to 1Gbps 1x Ethernet (SGMII interface) up to 2.5Gbps
Audio Interface	2x I2S Audio
Security Device	Advanced security, safety and reliability integrated in the SOC Trusted Platform Module (TPM) 2.0 (optional)
OS Support	Linux® (Yocto Project®) Android Board Support Package (on request)
Power Requirements	Voltage: +5V +/-5% Power Cosumption: 7-9W typ.
Operating Temp.	0° ... 70°C (commercial) - 25° ... 85°C (extended) - 40° ... 85°C (industrial)
Humidity	5 ... 95% (operating, non-cond.), 5 ... 95% (storage, non-cond.)

TRIA OSM-SB-EP5

The OSM-SB-EP5 is the right platform for evaluation of the OSM-Modules with all available interfaces, but can be used as well as SimpleFlex solution.

SimpleFlex is the intelligent combination of a standard Computer-On-Module with a standard carrier board. It combines the advantages of Standard SBC and Custom SBC by choosing the COM from a huge portfolio of CPU and memory configuration.

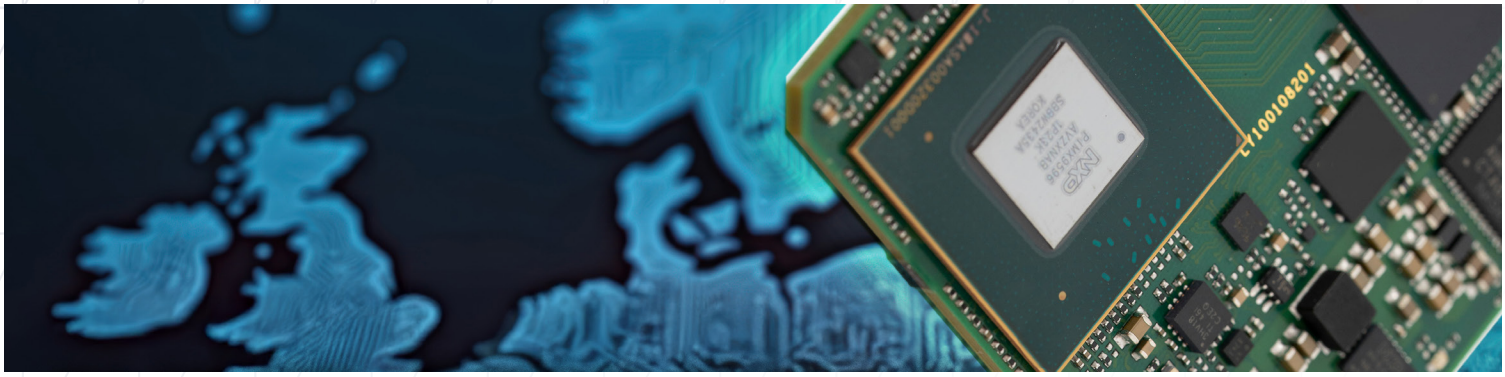


MAAXBOARD OSM93

MaaXBoard OSM93 features an NXP i.MX 93 System on Chip compute module, with integrated AI/ML NPU accelerator, EdgeLock security enclave and Energy Flex architecture that supports separated processing domains, such as the Application domain with two Arm® Cortex®-A55 (1.7 GHz) cores, the real time domain with Arm® Cortex®-M33 (250 MHz) core and Flex domain with Arm® Ethos-U65 NPU (1 GHz). Other resources on the fitted MSC OSM-SF-IMX93 solder-down module include eMMC (16GB) memory, LPDDR4 (2GB, 3.7 GT/s) with inline ECC support, RTC clock and NXP PCA9451 PMIC.



SOFTWARE SERVICES



Tria software is designed to run industrial applications seamlessly on Tria hardware, helping you bring products to market faster.

We enable innovators in industrial embedded systems to build secure, modular software platforms they can rely on, backed by long-term support (LTS) that provides security updates over extended periods.

Fully tested and maintained **Yocto BSPs** are available across all our platforms, complemented by **AMI UEFI/BIOS** for all x86 and selected **Arm** platforms.

PROFESSIONAL SERVICES

- BIOS/UEFI Customization
- OS Customization
- Android HAL & Frameworks
- Secure Boot Provisioning & Integration
- OTA Integration
- GUI & App Development
- AI Integration
- Connectivity

Our **BSPs** and **UEFI/BIOS** are aligned with the requirements of the EU Cyber Resilience Act (CRA), providing a solid foundation for customers to develop and deliver CRA-compliant products.

Our secure software approach is built around **Yocto-based BSPs** and **UEFI/BIOS** implementations, supported by long-term maintenance, continuous vulnerability monitoring, and CRA-ready reporting. We also provide value-added tools and services helping our customers on their journey towards CRA compliance. For example consulting services for structured CVE management, ensuring security issues are handled transparently across the full product lifecycle.

CYBER RESILIENCE AND LONG-TERM SUPPORT (LTS)

- CRA compliance support for x86 and Arm
- Vulnerability monitoring and management
- SBOM generation
- Automated testing
- LTS for x86 and Arm
- Security and Architecture Consulting
- Connectivity



WHY CHOOSE TRIA?

The largest compute portfolio. World class partners. European Manufacturing. Full customization.
From the largest range of standard compute modules to our in-house manufacturing and full system and HMI building service, Tria is trusted by the world's top brands to embed computing into their products. tria-technologies.com

TALK TO OUR EXPERTS:
Your Edge Success Starts Here.

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