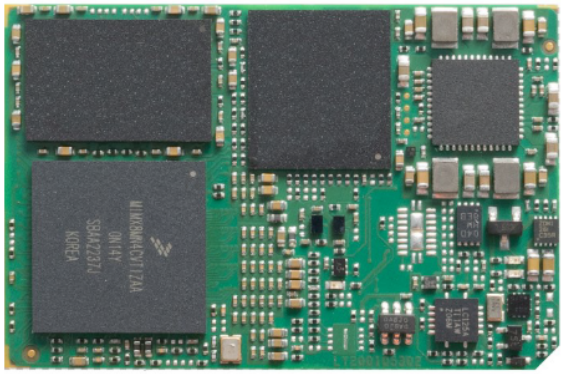
TRIA OSM-MF-IMX8NANO

NXP™ i.MX 8M Nano ARM® Cortex™-A53



30 x 45 mm

2-4 W

-40 +85

Highlights

- Single, Dual or Quad core ARM Cortex-A53
- Applications Processor up to 1.5GHz
- ARM Cortex-M7 Real Time Processor up to 750MHz
- Vivante multimedia 2D/3D Graphics Processor
- Up to 2GB LPDDR4 SDRAM
- Up to 256GB eMMC Flash
- MIPI-DSI x4
- MIPI CSI-2 (4-lane) Camera Interface
- 1x USB 2.0 Host/Device interface
- 1x Ethernet (RGMII)
- 1x MMC/SD/SDIO interface
- 1x I2S Audio Interface
- 17x GPIO, 4x PWM
- 4x UART, 2x SPI, 2x I2C
- OSM-MF Compliant, 476 Pin, RM 1,25 mm

Technical Data

Technology	ARM
Formfactor	OSM-MF, 476 Contacts, 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
Chipset	SOC
RAM	Up to 2GB 3200MT/s LPDDR4 SDRAM, soldered
Flash	Up to 256GB eMMC Flash QSPI NOR Flash (optional)
Storage Interfaces	1x MMC/SD/SDIO
USB	1x USB 2.0 Host/Client
Serial Interfaces	1x UART Console with Rx, Tx only 2x UART with 2-wire hand shake 1x UART w/o hand shake
Bus Interfaces	2x I2C up to 400 Kbit/s 2x SPI (with two chip selects)
Display Controller	Vivante GC7000UL 3D Graphics Processing Unit (GPU) 3D Graphics Acceleration, 2 shaders, 16GFLOPS OpenGL ES 1.0, 2.0, 3.0, 3.1, OpenCL 1.2 and Vulkan support Video Processing Unit not available
Display Interfaces	MIPI-DSI Display Interface, 4 lanes, up to 1920x1080 @ 60fps
Network Interface	1x Ethernet (RGMII interface)
Audio Interface	2x I2S Audio
Security Device	Advanced Security, Safety, and Reliability integrated in the SOC
Miscellaneous	Watchdog Timer for system reset (programmable, 1s ... 600s) Temperature compensated RTC 24x GPIO, configurable as input or output 3x PWM MIPI CSI-2 camera interface (4 lane)
Feature Highlights	OSM, Size-M compatible
OS Support	Linux Board Support Package Android Board Support Package (on request)
Power Requirement	Power Supply +5V +/-5% Power Consumption 2-4 W typ. (depending on CPU and optional features)

Environment	Temperature Range: 0°C ... +70°C operating commercial -40°C ... +85°C operating extended -40°C ... +85°C storage Humidity: 5 ... 95% (operating, non condensing) 5 ... 95% (storage, non-condensing)
Dimensions	30 x 45 mm
Certificates	UL / CE
Carrier	TRIA SM2F-OSM-AD-001

Technical Data for TRIA OSM-MF-IMX8NANO

Order Reference

Order No.	Description	Reference	Status*
98984	OSM 1.1 module based on NXP i.MX 8M Nano Dual, Dual-Core Cortex-A53 processor at 1.4GHz, 1GB LPDDR4, 4GB eMMC Flash, 1x USB2.0 Host/ Device, industrial temperature -40...+85°C	MSC OSM-MF-IMX8NANO-DC-02N0800I PCBFTX	PV
98985	OSM 1.1 module based on NXP i.MX 8M Nano Quad, Quad-Core Cortex-A53 processor at 1.4GHz, 1GB LPDDR4, 16GB eMMC Flash, 1x USB2.0 Host/Device, extended temperature -25°C...+85°C	MSC OSM-MF-IMX8NANO-QC-04N0800E PCBFTX	PV
96651	OSM 1.1 module based on NXP i.MX 8M Nano Quad, Quad-Core Cortex-A53 processor at 1.4GHz, 1GB LPDDR4, 16GB eMMC Flash, soldered on SM2F-OSM-AD-001	MSC SM2F-OSM-AD-8NQ1G160-001 ES2 PCBES	OR
96650	OSM 1.1 module based on NXP i.MX 8M Nano Dual, Dual-Core Cortex-A53 processor at 1.4GHz, 1GB LPDDR4, 4GB eMMC Flash, soldered on SM2F-OSM-AD-001	MSC SM2F-OSM-AD-8ND1G40-001 ES2 PCBES	OR

Ordering Information for TRIA OSM-MF-IMX8NANO

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

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