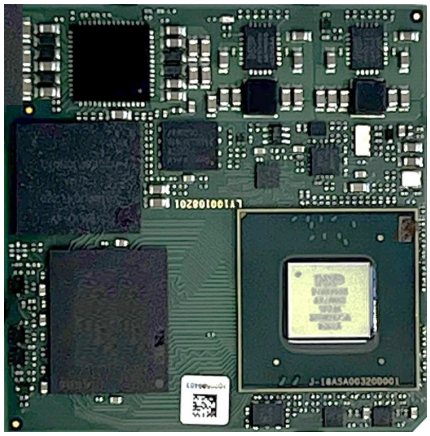
TRIA OSM-LF-IMX95

NXP® i.MX 95 Arm®
Cortex® -A55 / M7 / M33

45 x 45 mm



4-6 W

-40 +85

OPEN STANDARD MODULE ™

Highlights

- Hexa core Arm Cortex-A55 up to 2.0GHz
- Arm Cortex-M7 Real Time Processor at 800MHz
- Arm Cortex-M33 Real Time Processor at 333MHz
- NXP eIQ Neutron Neural Processing Unit.
- NXP Image Signal Processor
- Arm Mali Graphics Processing Unit
- Video Processing Unit up to 4k decode/encode
- Up to 16GB LPDDR5 SDRAM with inline ECC
- Up to 256GB eMMC Flash
- Dual-channel LVDS, MIPI-DSI x4
- Dual MIPI CSI-2 Camera interface
- 2x PCI Express x1 Gen. 3
- 1x USB 3.0/2.0 Host/Device interface
- 1x USB 2.0 Host/Device interface
- 2x Gigabit Ethernet (RGMII)
- 1x up to 10 Gigabit Ethernet (SerDes)
- 3x CAN-FD Interface, 2x SDIO interface
- 2x I2S Audio Interface
- 24x GPIO, 6x ADC, 4x PWM
- UART, SPI, QSPI, I2C

Technical Data

Technology	ARM
Formfactor	OSM-LF, 662 Contacts, RM 1,25 mm
CPU	NXP i.MX 95 Arm Cortex-A55 Applications Processor • 6/4 cores, 1.8 - 2.0 GHz, with ISP, NPU, GPU, VPU, DC, dual-core option* • 6/4 cores, 1.8 - 2.0 GHz, with ISP, NPU, VPU • 6/4 cores, 1.8 - 2.0 GHz, with NPU, GPU, VPU, DC • 6/4 cores, 1.8 - 2.0 GHz, with NPU, dual-core option *dual-core part available in commercial temperature and 1.0 GHz Arm Cortex-M7 Real Time Processor at 800MHz Arm Cortex-M33 Real Time Processor at 333MHz NXP eIQ Neutron Neural Processing Unit (processor SKU dependent) NXP Image Signal Processor (processor SKU dependent)
Chipset	SOC
RAM	Up to 16GB 6400MT/s LPDDR5 SDRAM, soldered, inline ECC support
Flash	Up to 256GB eMMC 5.1 Flash QSPI NOR/NAND Flash (optional)
Storage Interfaces	2x MMC/SD/SDIO
USB	1x USB 2.0 Host/Client, 1x USB 2.0 Host/Client or 1x USB 3.0 Host/Client
Serial Interfaces	3x UART Console with Rx, Tx only 2x UART with 2-wire hand shake (RTS/CTS)
Bus Interfaces	2x PCI Express x1 Gen.3 lane 5x I2C up to 400 Kbit/s (2x for GP) 2x CAN-FD / CAN 2.0B 1x CAN-FD / CAN 2.0B on vendor defined pins 1x SPI (with two chip selects) 1x QSPI/SPI (with two chip selects)
Display Controller	Arm Mali G310 GPU (OpenGL® ES 3.2, Vulkan®1.2, OpenCL 3.0), (processor SKU dependent) Video Processing Unit with up to 4k decode/encode (processor SKU dependent)
Display Interfaces	MIPI-DSI Display Interface, 4 lanes, up to 3840x1440p60 Dual-channel 18/24 bit LVDS interface, up to 1080p60
Network Interface	2x Gigabit Ethernet (RGMII interface) 1x up to 10 Gigabit Ethernet (SerDes interface) with TSN support
Audio Interface	2x I2S Audio
Security Device	Advanced Security, Safety, and Reliability integrated in the SOC Integrated EdgeLock secure enclave to simplify implementation of security critical functions like secure boot, cryptography, trust provisioning, run-time attestation, key management services, provision for secure remote management, secure over-the-air updates (OTA) and dedicated cryptographic engine.
Miscellaneous	Watchdog Timer for system reset (programmable, 1s ... 600s) Temperature compensated RTC 24x GPIO, configurable as input or output 4x PWM 2x ADC inputs (12-bit) 4x ADC inputs (12-bit) on vendor defined pins 64kbit ID EEPROM on I2C bus MIPI CSI-2 camera interface (CSIA, 4-lane) MIPI CSI-2 camera interface (CSIB, 4-lane), shared (onboard switch) with MIPI-DSI interface

OSM

Feature Highlights	OSM V1.2, Size-L compatible
OS Support	Linux Board Support Package Android support on request
Power Requirement	Power Supply +5V +/-5% Power Consumption 4-6 W typ. (depending on CPU)
Environment	Temperature Range: Commercial: 0° ... 70°C (operating) -20° ... 85°C (storage) Extended: -25° ... 85°C (operating) -40° ... 85°C (storage) Industrial: -40° ... 85°C (operating) -40° ... 85°C (storage) Humidity: 5 ... 95% (operating, non condensing) 5 ... 95% (storage, non-condensing)
Dimensions	45 x 45 mm
Certificates	UL /CE
Carrier	TRIA OSM-SB-EP5-95 (coming soon)

Technical Data for TRIA OSM-LF-IMX95

Order Reference

Order No.	Description	Reference	Status*
121781	OSM module Size L (45x45 mm) with i.MX 9556 (6x A55 @ 1.8 GHz, NPU, GPU, VPU, Display), w/ 2.5 GB (SERDES/ SGMII), 4GB LPDDR5 (w/ inline ECC support), 8GB eMMC, no NOR/NAND flash, LVDS, DSI, CSI-2 (Port A), 2x GbE (RGMII), 2x PCIe, 2x CAN-FD, 1x USB 3.0 OTG (Port C) + 1x USB 2.0 OTG (Port A), PCIe Clock available, Industrial Temperature (-40..+85°C)	MSC OSM-LF-IMX95-HC5-23N0A10I PCBFTX	PV
121782	OSM module Size L (45x45 mm) with i.MX 9596 (6x A55 @ 1.8/2.0 GHz, ISP, NPU, GPU, VPU, Display), w/ 2.5 GB (SERDES/SGMII), 8GB LPDDR5 (w/ inline ECC support), 64GB eMMC, no NOR/NAND flash, LVDS, DSI, CSI-2 (Port A), 2x GbE (RGMII), 2x PCIe, 2x CAN-FD, 1x USB 3.0 OTG (Port C) + 1x USB 2.0 OTG (Port A), PCIe Clock available, Industrial Temperature (-40..+85°C)	MSC OSM-LF-IMX95-HC9-36N0A10I PCBFTX	PV

Ordering Information for TRIA OSM-LF-IMX95

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

Please ask for further variants!

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