

## TRIA OSM-MF-IMX8PLUS

NXP® i.MX 8M Plus Arm® Cortex®-A53



30 x 45 mm

2-6 W

-40 +85



### Highlights

- Dual or Quad core ARM Cortex-A53 Applications Processor up to 1.8GHz
- ARM Cortex-M7 Real Time Processor at 800MHz
- GC7000UL 2D/3D Graphics Processor with OpenCL and Vulkan support
- 1080p60 H.265 decode, 1080p60 H.264 encode
- (VPU not available on "Plus Quad Lite")
- Machine Learning Accelerator (2.3 TOPS)
- (NPU not available on "Plus Quad Lite")
- Hifi4 Audio DSP, operating up to 800MHz
- Image Sensor Processor (ISP) supports 12MP@30fps, 4kp45
- Up to 8GB LPDDR4 SDRAM with inline ECC support
- Up to 256GB eMMC 5.1 Flash
- MIPI-DSI x4, single channel LVDS (on RGB)
- MIPI CSI-2 (4-lane) Camera Interface
- 1x USB 2.0 + 1x USB 3.0 Host/Device interface
- 2x Ethernet (RGMII), IEEE 1588, 1x with TSN
- 2x MMC/SD/SDIO interface
- 2x I2S Audio Interface
- 2x CAN-FD interface
- 20x GPIO, 4x PWM
- 4x UART, 3x SPI, 2x I2C
- 1x PCIe x1 Gen.3
- OSM-MF Compliant, 476 Pin, RM 1,25 mm

## Technical Data

<b>Technology</b>	ARM
<b>Formfactor</b>	OSM-MF, 476 Pin, RM 1,25 mm
<b>CPU</b>	<p>NXP i.MX 8M Plus ARM Cortex-A53 Applications Processor</p> <ul style="list-style-type: none"> <li>• i.MX 8M Plus Quad with NPU, ISP, VPU, HIFI4, CAN, 1.8GHz, Consumer</li> <li>• i.MX 8M Plus Quad with ISP, VPU, CAN, 1.8GHz, Consumer</li> <li>• i.MX 8M Plus QuadLite with CAN, 1.8GHz, Consumer</li> <li>• i.MX 8M Plus Dual, with NPU, ISP, VPU, HIFI4, CAN, 1.8GHz, Consumer</li> <li>• i.MX 8M Plus Dual, with NPU, VPU, CAN, 1.8GHz, Consumer</li> <li>• i.MX 8M Plus Quad with NPU, ISP, VPU, HIFI4, CAN-FD, 1.6GHz, Industrial</li> <li>• i.MX 8M Plus Quad with ISP, VPU, CAN-FD, 1.6GHz, Industrial</li> <li>• i.MX 8M Plus QuadLite with CAN-FD, 1.6GHz, Industrial</li> <li>• i.MX 8M Plus Dual, with NPU, ISP, VPU, HIFI4, CAN-FD, 1.6GHz, Industrial</li> <li>• i.MX 8M Plus Dual, with NPU, VPU, CAN-FD, 1.6GHz, Industrial</li> </ul> <p>ARM Cortex-M7 Real Time Processor at 800MHz</p>
<b>Chipset</b>	SOC
<b>RAM</b>	Up to 8GB 4000MT/s LPDDR4 SDRAM, soldered
<b>Flash</b>	Up to 256GB eMMC 5.1 Flash
<b>Storage Interfaces</b>	2x MMC/SD/SDIO
<b>USB</b>	1x USB 2.0 Host/Client, 1x USB 3.0 Host/Client
<b>Serial Interfaces</b>	<p>1x UART Console with Rx, Tx only          2x UART with 2-wire hand shake          1x UART w/o hand shake</p>
<b>Bus Interfaces</b>	<p>1x PCI Express x1 Gen.3 lane          2x I2C up to 400 Kbit/s          3x SPI (with two chip selects)</p>
<b>Display Controller</b>	<p>Vivante GC7000UL 2D/3D Graphics Processing Unit (GPU)          3D Graphics Acceleration, 2 shader, 16 GFLOPs          OpenGL ES 1.1, 2.0, 3.0, OpenCL 1.2, Vulkan          Video Processing Unit (not available on "Plus Quad Lite") with hardware support for          1080p60 HEVC H.265, VP9, H.264, VP8 decode          1080p60 H.264, VP8 encode</p>
<b>Display Interfaces</b>	<p>MIPI-DSI Display Interface, 4 lanes, up to 1920x1080 @ 60fps          Dual channel LVDS (on RGB- and eDP- interface)</p>
<b>Network Interface</b>	<p>2x Ethernet (RGMII interface)          IEEE 1588, 1x with TSN</p>
<b>Audio Interface</b>	2x I2S Audio
<b>Security Device</b>	Advanced Security, Safety, and Reliability integrated in the SOC
<b>Miscellaneous</b>	<p>Watchdog Timer for system reset (programmable, 1s ... 600s)          Temperature compensated RTC          30x GPIO, configurable as input or output          4x PWM          MIPI CSI-2 camera interface (4 lane)</p>
<b>Feature Highlights</b>	OSM, Size-M compatible
<b>OS Support</b>	<p>Linux Board Support Package          Android 12 and Windows 10 IoT Enterprise support on request</p>

<b>Power Requirement</b>	Power Supply +5V +/-5% Power Consumption 2-6 W typ. (depending on CPU and optional features)
<b>Environment</b>	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)
<b>Dimensions</b>	30 x 45 mm
<b>Certificates</b>	UL /CE
<b>Carrier</b>	TRIA SM2F-OSM-AD-001

Technical Data for TRIA OSM-MF-IMX8PLUS

## Order Reference

Order No.	Description	Reference	Status*
114789	OSM 1.2 module based on NXP i.MX 8M Plus Quad (with VPU, ISP), Quad-Core Cortex-A53 processor at 1.6GHz, 4GB LPDDR4, 8GB eMMC Flash, 2x GbE (RGMII), 1x USB2.0 Host/Device, 1x USB3.0 Host/Device, MIPI-DSI, LVDS (on RGB interface), MIPI CSI-2 Camera input, 2x CAN-FD, extended temperature -25...+85°C	MSC OSM-MF-IMX8PLUS-QC6-23N0A00E PCBFTX	PV
114881	OSM 1.2 module based on NXP i.MX 8M Plus Quad (with VPU, NPU, ISP), Quad-Core Cortex-A53 processor at 1.6GHz, 4GB LPDDR4, 16GB eMMC Flash, 2x GbE (RGMII), 1x USB2.0 Host/device, 1x USB3.0 Host/Device, MIPI-DSI, LVDS (on RGB interface), MIPI CSI-2 Camera input, 2x CAN-FD, industrial temperature -40...+85°C	MSC OSM-MF-IMX8PLUS-QC-24N0A00I PCBFTX	PV
114880	OSM 1.2 module based on NXP i.MX 8M Plus Dual Lite (with NPU, VPU), Dual-Core Cortex-A53 processor at 1.6GHz, 1GB LPDDR4, 8GB eMMC Flash, 2x GbE (RGMII), 1x USB2.0 Host/Device, 1x USB3.0 Host/Device, MIPI-DSI, LVDS (on RGB interface), MIPI CSI-2 Camera input, 2x CAN-FD, extended temperature -25°C...+85°C	MSC OSM-MF-IMX8PLUS-DCL-03N0A00E PCBFTX	PV
115797	OSM 1.2 module based on NXP i.MX 8M Plus Quad (with VPU, NPU, ISP), Quad-Core Cortex-A53 processor at 1.6GHz, 4GB LPDDR4, 16GB eMMC Flash, (OSM Part number: 114881), soldered on SM2F-OSM-AD-001	MSC SM2F-OSM-AD-8PD4G160-001 ES3 PCBES	OR
115795	OSM 1.2 module based on NXP i.MX 8M Plus Dual Lite, Dual-Core Cortex-A53 processor at 1.6GHz, 1GB LPDDR4, 8GB eMMC Flash, (OSM Part number: 114880), soldered on SM2F-OSM-AD-001	MSC SM2F-OSM-AD-8PD1G080-001 ES3 PCBES	OR

Ordering Information for TRIA OSM-MF-IMX8PLUS

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

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