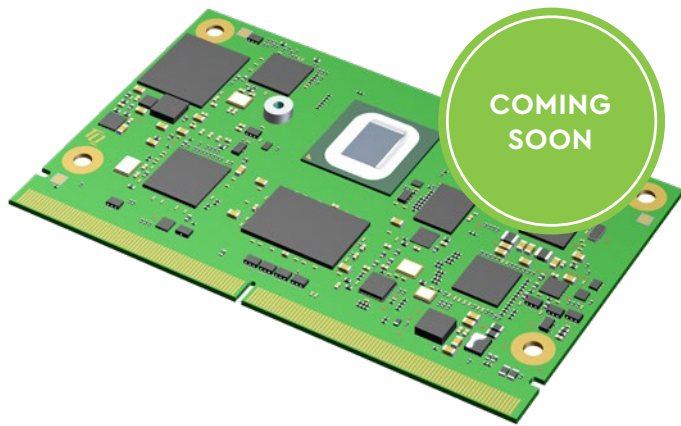


# TQMa8MPxS

Arm® Family



## HIGHLIGHTS

- ▶ Advanced Audio properties with HiFi4 DSP
- ▶ Machine Learning Accelerator 2.3 TOPS
- ▶ Integrated Cortex®-M7
- ▶ High-speed communication via 2x Gbit Ethernet (1x TSN), 1x PCIe and 2x USB 3.0 interface
- ▶ Low power consumption (typ. 4 W)
- ▶ Integrated security functions

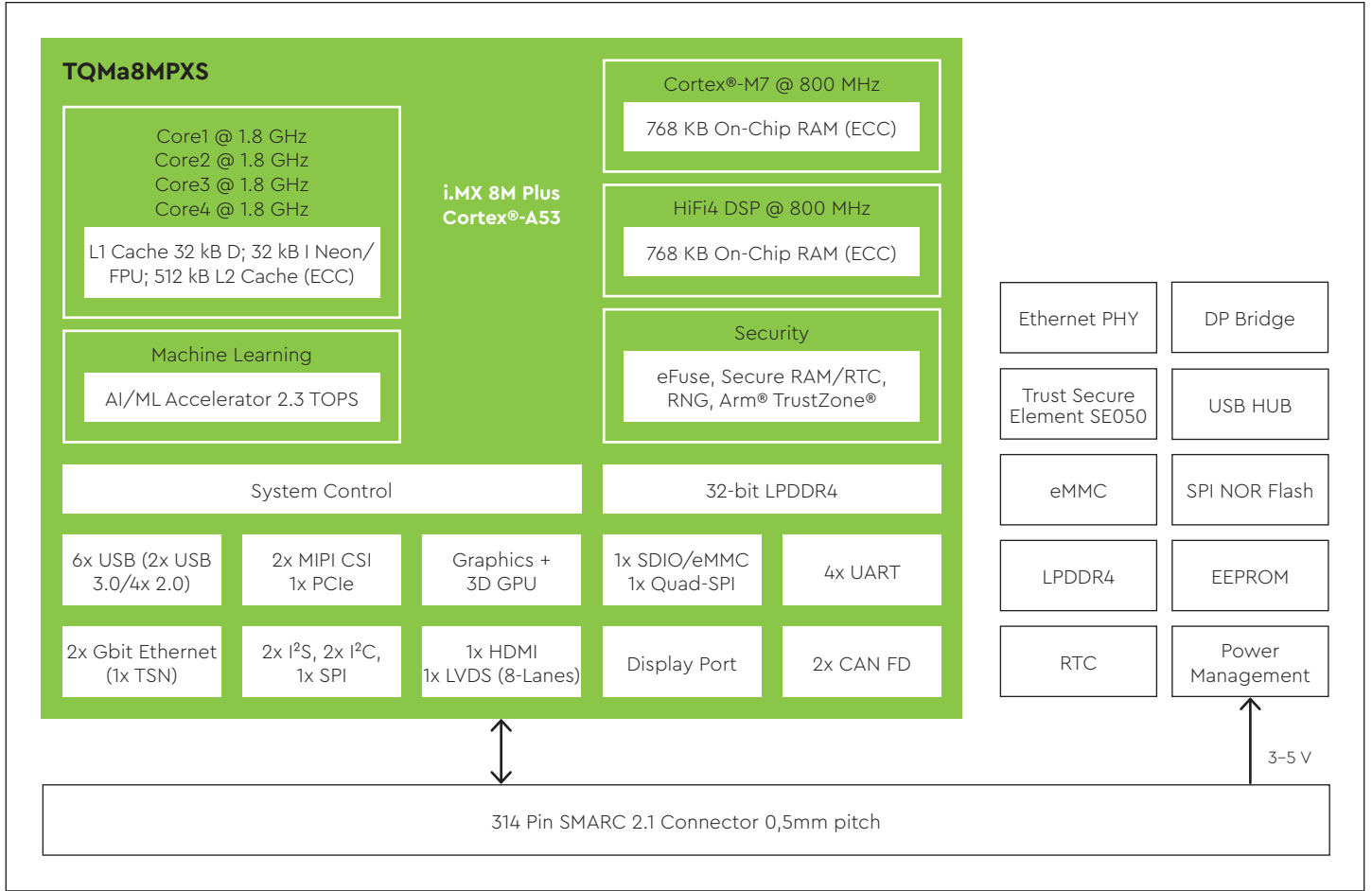
**Embedded Cortex®-A53 SMARC 2.1 module based on i.MX 8M Plus with Machine Learning Accelerator**

## TECHNICAL SPECIFICATION

<b>CPU</b>	i.MX 8M Plus Quad 8 ML/AI i.MX 8M Plus Quad 6 Video i.MX 8M Plus Quad 4 Lite
<b>Interfaces</b>	Up to 2x Gbit-Ethernet (1x TSN) Up to 2x USB 3.0 Up to 4x USB 2.0 (USB Hub) Up to 1x USB 2.0 OTG Up to 2x CAN FD Up to 4x UART
<b>Periphery interfaces</b>	Up to 1x SDIO / eMMC Up to 1x PCIe 2.0 Up to 2x I <sup>2</sup> C Up to 1x SPI Up to 1x QSPI Up to 2x I <sup>2</sup> S 14x GPIO
<b>Graphic</b>	1x HDMI, 1x eDP (optional) 1x LVDS (4/8 Lanes or 2x 4 Lanes) 2x MIPI CSI2 (1x4 Lanes / 1x2 Lanes)

<b>Memory</b>	LPDDR4-SDRAM: Up to 8 GB Quad SPI NOR: Up to 256 MB (TBD) eMMC Flash: Up to 256 GB EEPROM: 0 / 64-kbit
<b>Other</b>	Real Time Clock (RTC) Secure Element SE050 (optional) Temperature sensor Gyroscope sensor (optional) CPU JTAG interface
<b>Power supply</b>	3.0 V ... 5.25 V (5V optional)
<b>Ambient conditions</b>	Standard temperature range: -25°C...+85°C Extended temperature range: -40°C...+85°C
<b>Dimensions</b>	82 mm x 50 mm
<b>Plug-in system</b>	SMARC 2.0/2.1 Board-to-board plug-in system 314 pin
<b>Operating systems</b>	Linux (Yocto/Armbian)
<b>Operating systems on request</b>	Android PikeOS

## BLOCK DIAGRAM TQMa8MPXS



## ORDERING INFORMATION

<b>TQMa8MPDS-AA</b>	TQMa8MPDS-AA, Dual 3 ML/AI Cortex®-A53/1,6 GHz, 16 GB eMMC Flash, 2GB LPDDR4, 64 kB EEPROM, RTC, with LVDS, -25°C...+85°C
<b>TQMa8MPQS-AA</b>	TQMa8MPQS-AA, Quad 6 Video Cortex®-A53/1,6 GHz, 16 GB eMMC Flash, 2GB LPDDR4, 64 kB EEPROM, RTC, with LVDS, -25°C...+85°C
<b>TQMa8MPQS-AB</b>	TQMa8MPQS-AB, Quad 8 ML/AI Cortex®-A53/1,6 GHz, 16 GB eMMC Flash, 2GB LPDDR4, 64 kB EEPROM, with LVDS, RTC, -25°C...+85°C
<b>TQMa8MPQS-AC</b>	TQMa8MPQS-AC, Quad 8 ML/AI Cortex®-A53/1,6 GHz, 16 GB eMMC Flash, 2GB LPDDR4, 64 kB EEPROM, with eDP, RTC, -25°C...+85°C

Other configurations on request

<b>STKa8MPxS-AA (Prototypes Q2/2025)</b>	STKa8MPxS (Eval Kit) with TQMa8MPxS-AA, Quad Cortex® A53/1,6 GHz 2 GB LPDDR4, 16 GB eMMC Flash, 64 kB EEPROM, RTC, 3x RS232, 2 x CAN FD separated, 1x USB 3.0 OTG, 1x USB 3.0 HOST, 1x USB 2.0 HOST, 2x ETH 10/100/1000, 1x Display Port, 1x HDMI, 1x Dual LVDS, 1x PCIe, Audio, RTC, Temperature sensor, Reset-Button, SD interface, Power Supply, 4 GB SD card, Cables, passive Cooling
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**Starterkit STKa8MPxS set**  
 The core of the STKa8MPxS set is the TQMa8MPxS module with a Quad Cortex®-A53 CPU. The components contained in the starter kit constitute a modular system enabling you to develop your own product ideas. Development of graphic interfaces can be started immediately using the prepared combination of closed display unit and starter kit that are matched to each other. To develop your own hardware you can use the certified and qualified circuit components of the starter kit in your own designs.

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