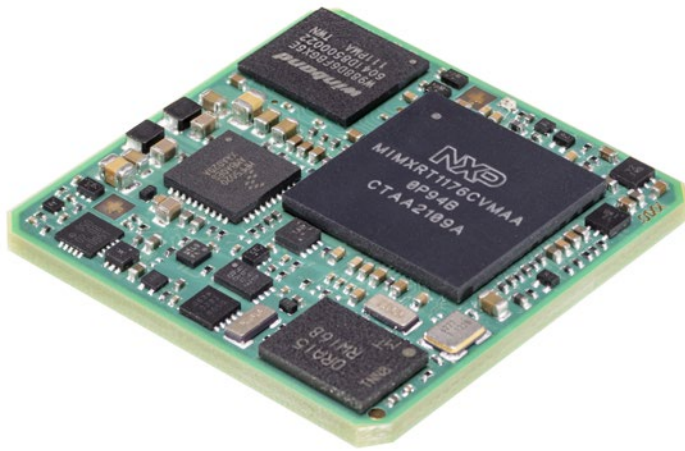


# TQMa117xL

Arm® Family



## HIGHLIGHTS

- ▶ Display up to WXGA (1280×800) @ 60 fps
- ▶ Up to 3x CAN FD
- ▶ Integrated Cortex®-M4
- ▶ High-speed communication via 2x Gbit Ethernet (1x TSN/1x AVB ) and 2x USB 2.0 interface
- ▶ Low power consumption (typ. 1 W)
- ▶ Integrated security functions

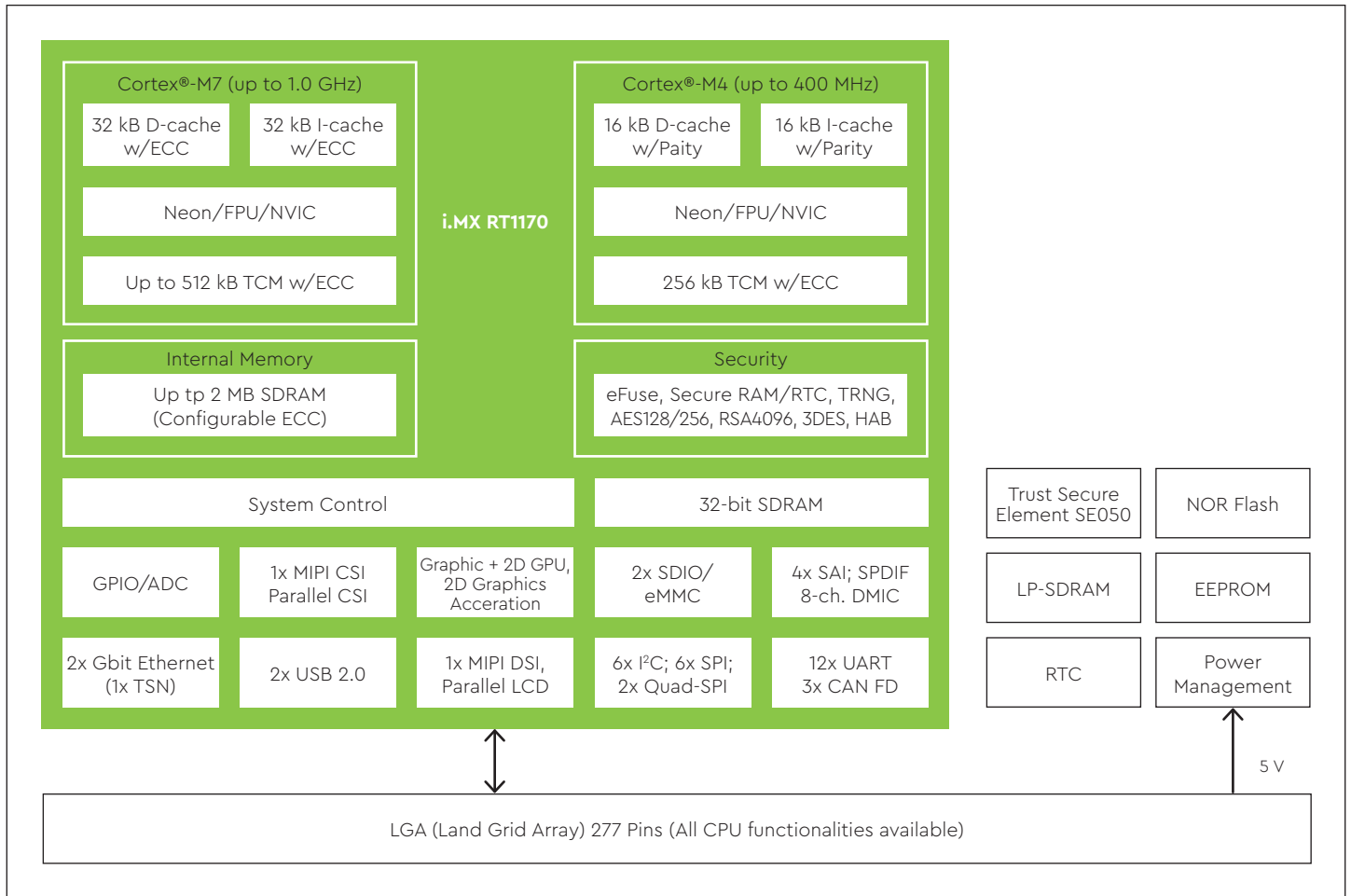
**Embedded Cortex®-M7 module based on i.MX RT1170 with Real-Time Functionality**

## TECHNICAL SPECIFICATION

<b>CPU</b>	i.MX RT1171, i.MX RT1172, i.MX RT1173, i.MX RT1175, i.MX RT1176
<b>Interfaces</b>	Up to 2x Gbit-Ethernet (1x TSN/1x AVB) Up to 1x 10/100 Ethernet w/IEEE1588 Up to 2x USB 2.0 interface Up to 3x CAN FD Up to 12x UART
<b>Periphery interfaces</b>	Up to 2x SDIO 3.0/eMMC 5.0 Up to 6x I <sup>2</sup> C Up to 6x SPI Up to 2x QSPI Up to 4x SAI Up to 8-ch. DMIC Up to 1x SPDIF Up to 2x FlexIO
<b>Graphic</b>	LCD Interface: 1x MIPI DSI; (2 Lanes) Parallel LCD Camera: 1x MIPI CSI (2 Lanes), Parallel CSI

<b>Memory</b>	LP-SDRAM: Up to 64 MB NOR: Up to 256 MB EEPROM: 0/64-kbit
<b>Other</b>	Real Time Clock (RTC) Secure Element SE050 Temperature sensor CPU JTAG interface
<b>Power supply</b>	5 V
<b>Ambient conditions</b>	Standard temperature range: -25°C...+85°C Extended temperature range: -40°C...+85°C
<b>Dimensions</b>	31 mm x 31 mm
<b>Plug-in system</b>	LGA (Land Grid Array) 277 pins
<b>Operating systems</b>	Free RTOS
<b>Operating systems on request</b>	(TBD)

## BLOCK DIAGRAM TQMA117XL



## ORDERING INFORMATION

**TQMa1171L-AA** TQMa1171L-AA, Cortex®-M7/800 MHz, 16 MB NOR Flash, 64 MB LP-SDRAM, 64 kB EEPROM, RTC, -40°C...+85°C

**TQMa1173L-AA** TQMa1173L-AA, Cortex®-M7/800 MHz, Cortex®-M4/240 MHz, 16 MB NOR Flash, 64 MB LP-SDRAM, 64 kB EEPROM, RTC, -40°C...+85°C

**TQMa1176L-AA** TQMa1176L-AA, Cortex®-M7/800 MHz, Cortex®-M4/240 MHz, 16 MB NOR Flash, 64 MB LP-SDRAM, 64 kB EEPROM, RTC, -40°C...+85°C

Other configurations on request

**STKa117xL-AA** STKa1176L (Eval Kit) with TQMa1176L-AA, Cortex®-M7/800 MHz, Cortex®-M4/400 MHz, 16 MB NOR Flash, 64 MB SDRAM, 64 kB EEPROM, RTC, 2x USB 2.0 HOST, 2x ETH 10/100/1000, 2x CAN FD, 1x RS485, 1x LVDS or 1x MIPI-DSI, 1x MIPI CSI, 1x Temperature sensor, GPIOs (4x 24V\_IN, 4x 24V\_OUT, 8x AI\_IN), Reset-Button, SD Card interface, WiFi, IoT Mobile Network, Power Supply, 4 GB SD card, Cables

**Starterkit STKa117xL set** The core of the STKa117xL set is the TQMa117xL module with a Cortex®-M7 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.

**TQ-Systems GmbH**

Mühlstraße 2 | Gut Delling | 82229 Seefeld | Germany  
Tel.: +49 8153 9308-0 | info@tq-group.com | tq-group.com

[tq-embedded.com](http://tq-embedded.com)