



TQMT1040

Higher Performance and Less Power Consumption with the new 64-Bit Multi-Core Processors

The TQMT1040 embedded module and related variants embody the next generation of the well-known TQMP1020/2020 QorIQ™ product family.

The QorIQ™ T1 processor family inaugurates new applications in industry and communications.

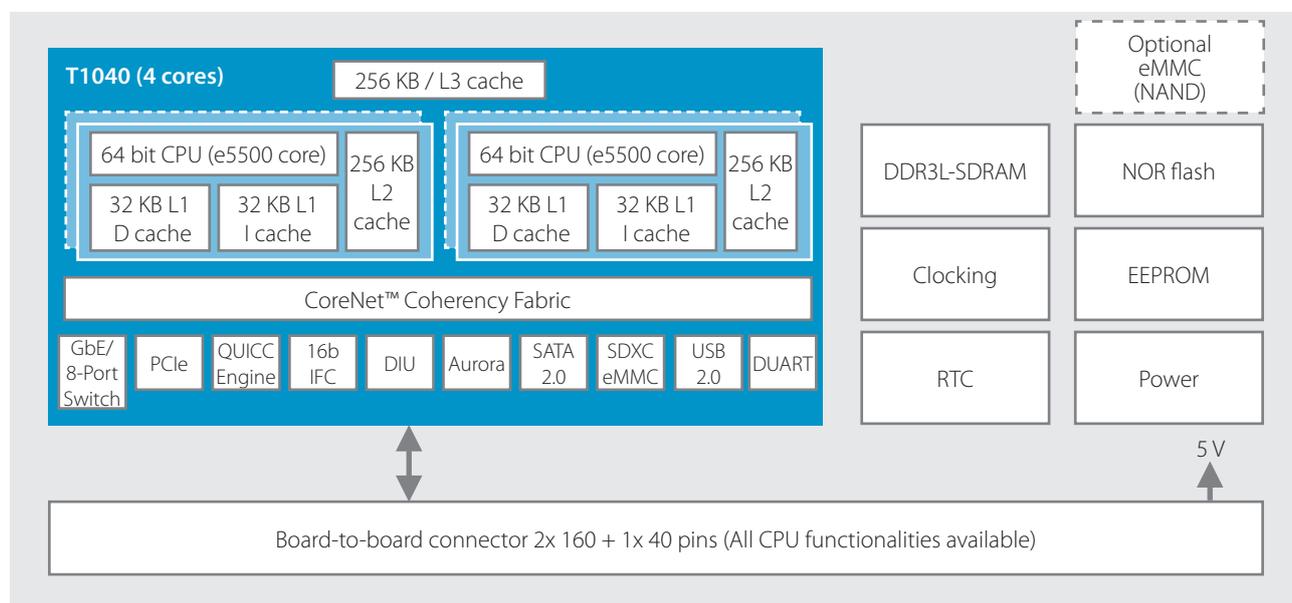
With four e5500 (64-bit) cores and a clock rate of up to 4x 1400 MHz, the TQ modules using QorIQ™ processors provide the best ratio between processing speed and power loss. The 28 nm technology significantly reduces the power consumption compared to a QorIQ™ module of the former generation.

This feature, together with the expanded temperature range and intelligent power management, enables the use in fan-free systems. The TQMT1040 is best suited for e.g. telecommunication applications that demand high availability, outdoor ambient temperatures and small overall size.

The highlights:

- Quad core up to 1400 MHz in 28 nm SOI for the best Performance/Watt ratio
- High speed communication with a combination of up to 4x Gigabit Ethernet and integrated 8-Port Switch, 4x PCIe and two USB 2.0 interfaces
- Dual SATA interfaces for data storage
- Easy function extensions via PCIe, eSPI, I²C and IFC (Local Bus)
- IEEE 1588 time synchronization in hardware
- Extremely compact module dimensions
- Display Interface Unit

Block diagram TQMT1040



Technical specification

Microprocessor

Quad T1040 Power Architecture™ e5500 cores (64-Bit)

System interfaces

4x Gigabit Ethernet (with IEEE® 1588v2)
8-Port Gigabit Ethernet Switch
2x USB 2.0 High Speed Host / Device / OTG
2x SATA 2.0
4x PCIe, 2.0 Controller up to 5.0 Gbit/s according to PCI Express specification 2.0 as Root-Complex or Endpoint
4x I²C, max. 400 kHz
1x Integrated Flash Controller (IFC), 16 bit
1x eSPI Controller
2x DUART, max. 115 kBaud (RS232)
Up to 32x GPIOs
2x TDM (via QUICC Engine)

Graphics

Display controller for TFT LCD displays (up to 24 bit RGB)

Memory

DDR3L-SDRAM: up to 8 GB *)
NOR flash: up to 256 MB
EEPROM: 32 KByte
Simple expansion for example via MMC, SDHC, USB

Other

Real Time Clock (RTC)
Watchdog
JTAG Interface
Real-Time Debug Interface (Aurora)

Power supply

5 V

Power consumption

Typ. 7 W up to 9 W

Ambient conditions

Standard temperature range: 0°C...+70°C
Extended temperature range: -40°C...+85°C

Dimensions

74 mm x 54 mm

Plug-in system

Board-to-board plug-in system 360 Pins

Operating systems

Linux

Operating systems on request

PikeOS™, Wind River Linux, VxWorks

Ordering information

TQMT1040-BA

TQ Minimodule with T1040 Quad Core CPU with up to 4x 1200 MHz, Crypto, 2 GB DDR3 SDRAM, 128 MB NOR flash, 32 KByte EEPROM, -40°C ... +85°C

Further product variants on request

STKT1040-SET-BA

Starter kit with TQ Minimodule TQMT1040-BA and baseboard STKT104X, Power Supply, Z-Modem cable, module extractor, heat spreader and documentation.

Baseboard STKT104X

The baseboard STKT104X supports all modules of the type series TQMT104x and represents an universal platform for evaluation and development of customer specific platforms for those modules.

Baseboard: Design support | Production

At TQ you not only get first-class embedded systems – we also provide a series of benefits around the embedded module:

- Support in writing a technical specification for gathering the requirements of your application
- Support in selection of components up to Obsolescence management
- Circuit diagram review
- Software, especially Board Support Packages and Hardware-close driver
- Starting-up of your baseboard

As system service provider TQ is able to take over the development, production and test of your baseboard. Therefore you get the whole tested unit from one hand.

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Technology in Quality

*) Up to 4 GB for extended temperature range (-40°C ... +85°C)