TQMT1042

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

The TQMT1042 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 TQMT1042 is best suited for e.g. industrial applications that demand high availability, outdoor ambient temperatures and small overall size.

The highlights:

- Quad core up to 1400 MHz in 28nm SOI for the best Performance/Watt ratio
- High-speed communication via 5x Gigabit Ethernet, 4x PCIe and two USB 2.0 High Speed 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 TQMT1042
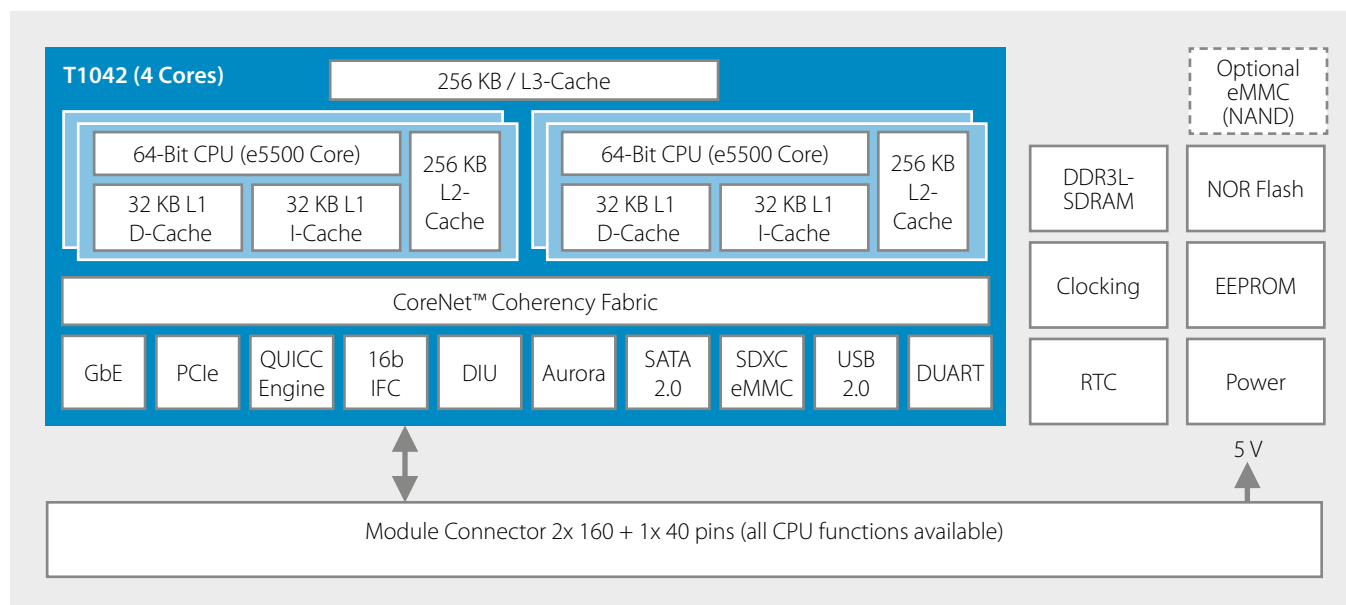
Technical specification

Microprocessor
Quad T1042 Power Architecture™ e5500 cores (64-Bit)

System interfaces
5x Gigabit Ethernet (with IEEE® 1588v2)
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
eMMC (optional): up to 8GB
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

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™, VxWorks® and more

Ordering information

TQMT1042-AA
TQ Minimodule with T1042 Quad Core CPU with up to 4x 1400 MHz, 2 GB DDR3 SDRAM, 128 MB NOR flash, 32 KByte EEPROM, -40°C ... +85°C

Further product variants on request

STKT1042-SET
Starter kit with TQ Minimodule TQMT1042 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.

TQ-Systems GmbH
Mühlstr. 2 I Gut Delling | 82229 Seefeld | Germany
Phone: +49 8153 9308-0 | Fax: +49 8153 4223
info@tq-group.com | www.tq-group.com
http://www.tq-group.com/en/TQMT1042

Technology in Quality