TQMT1022

Power Architecture®

Dual Core Power Architecture® module with multiple I/O connectivity and strong computing performance at low power budget.

HIGHLIGHTS

▶ Dual Core up to 1400 MHz in 28 nm SOI for the best Performance/Watt ratio

▶ High-speed communication with up to 5x Gbit 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

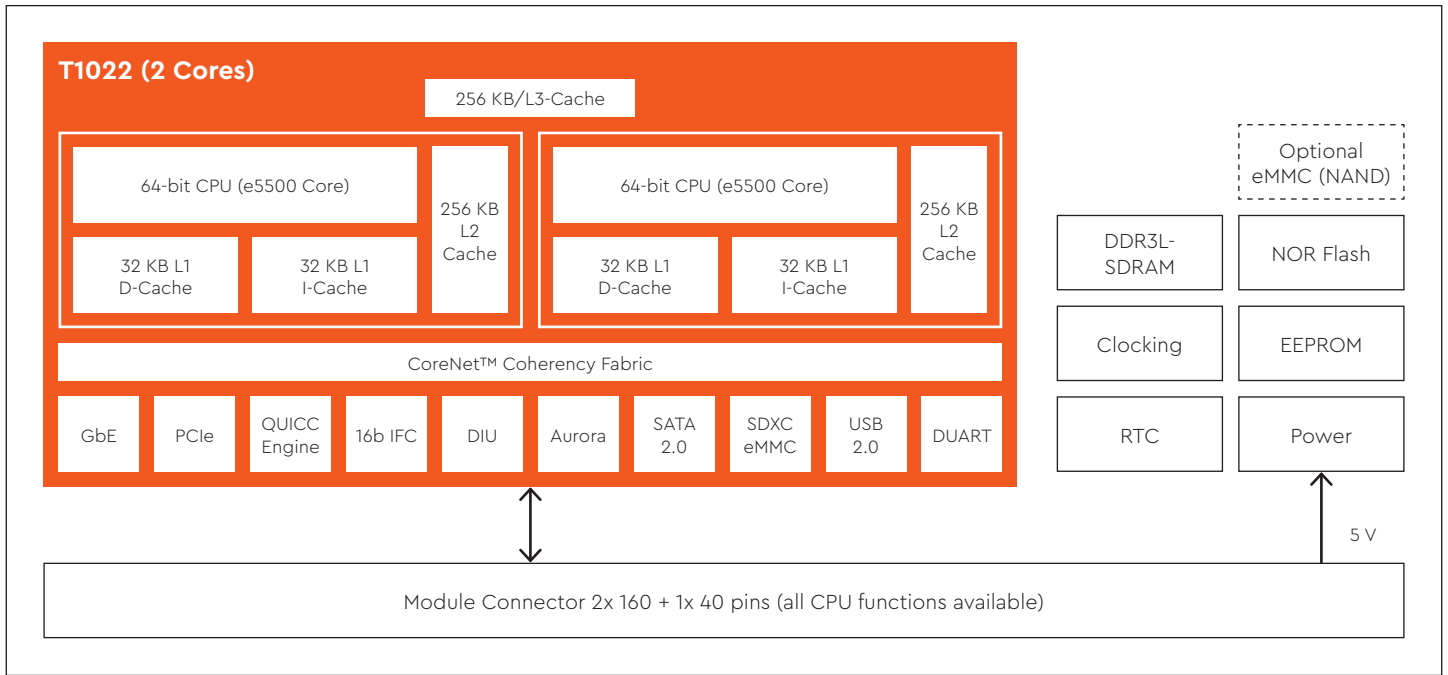▶ Extremely compact module dimensions

▶ Display Interface Unit

TECHNICAL SPECIFICATION

CPU	Dual T1022 Power Architecture® e5500 cores (64bit)
Interfaces	5x Gbit 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 with ECC*)
	NOR flash: up to 256 MB
	EEPROM: 32 KB
	eMMC (optional): up to 8 GB
	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. 5 W up to 7 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

*) Up to 4 GB with ECC for extended temperature range

BLOCK DIAGRAM TQMT1022

T1022 (2 Cores)

256 KB/L3-Cache

64-bit CPU (e5500 Core)	256 KB L2 Cache
32 KB L1 D-Cache	32 KB L1 I-Cache

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CoreNet™ Coherency Fabric

| GbE | PCIe | QUICC Engine | 16b IFC | DIU | Aurora | SATA 2.0 | SDXC eMMC | USB 2.0 | DUART |

Optional eMMC (NAND)

DDR3L-SDRAM	NOR Flash
Clocking	EEPROM
RTC	Power

5 V

Module Connector 2x 160 + 1x 40 pins (all CPU functions available)

ORDERING INFORMATION

TQMT1022-AA	TQ Minimodule with T1022 Dual Core CPU with up to 2x 1400 MHz, no Crypto, 2 GB DDR3 SDRAM, 128 MB NOR flash, 32 KB EEPROM, -40°C...+85°C
	Further product variants on request
STKT1022-SET-AA	Starter kit with TQ Minimodule TQMT1022-AA 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 TQMT102x and represents an universal platform for evaluation and development of customer specific platforms for those modules.
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.