QT1040-4GB-DK – Development Kit for Qormino® QT1040-4GB

The QT1040-4GB-DK is a high performance evaluation and development platform that supports Qormino® QT1040-4GB module, a processing platform featuring a T1040 Quad Core 64-bit e5500 PowerArchitecture® processor and a compact 4GB DDR4 memory with 72 bits bus (64 bits data / 8 bits ECC) on an optimized substrate

PROCESSING PLATFORM OVERVIEW

Qormino QT1040-4GB combines a massive amount of performances on a sized-optimized platform:

- T1040 Microprocessor, a Quad e5500 core running at up to 1.4GHz,
- 4GB DDR4 Memory with 72 bits incl. 8 bits of ECC,
- Built-in DDR4 bus layout between processor and memory allowing up to 1600MT/s

QT1040-4GB module features high-speed interfaces, Gbit Ethernet, PCIe Gen. 2, SATA 2.0, USB 2.0 and various low-speed interfaces (UART, SPI, I²C…) which provide a perfect combination for a range of Aerospace and Defense applications.

Qormino QT1040-4GB which is optimized for SWaP constraints (Size, Weight & Power) is manufactured on a 44 x 26 mm substrate, and benefits of the Teledyne e2v Obsolescence Management plan with 15+ years availability.

DEVELOPMENT KIT OVERVIEW

The QT1040-4GB-DK development kit is a high-performance computing, evaluation, and development platform that supports Qormino QT1040-4GB processing module.

The development kit consists in a daughter board, which features Qormino module and its minimum required external functions, including proximity power supplies, flash memories, clock, and microcontroller supervisor. The daughter board contains in particular a 32MB NOR flash memory and a 1GB NAND flash memory that can be used to store software and data.

The daughter board is plugged onto a motherboard that features the PHYs and interface connectors associated with the many different communication interfaces offered by Qormino module. The motherboard also includes configuration switches to setup the development kit functionality.

The development kit is integrated in a 19''/1U rack enclosure with integrated fans and mains power supply (230/115Vac compatible). Some connectors are externally available on the rack front panel, and some connectors are internally available when disassembling the rack cover.

HARDWARE KIT CONTENT

QT1040-4GB-DK development kit contains:

- 1x 19"/1U rack with integrated mains supply, motherboard, and electrical interfaces
- 1 x daughter board featuring the Qormino® QT1040-4GB assembled on the motherboard
- 1 x AC power cord (EU format)
- 1 x USB stick containing documentation & S/W files
- 1 x Micro-D 9 to Sub-D 9 serial cable
- 1 x right angle PCIe board adapter
- QA Test Report

Optional:
- JTAG Probe
- SD Card

QT1040-4GB-DK BLOCK DIAGRAM
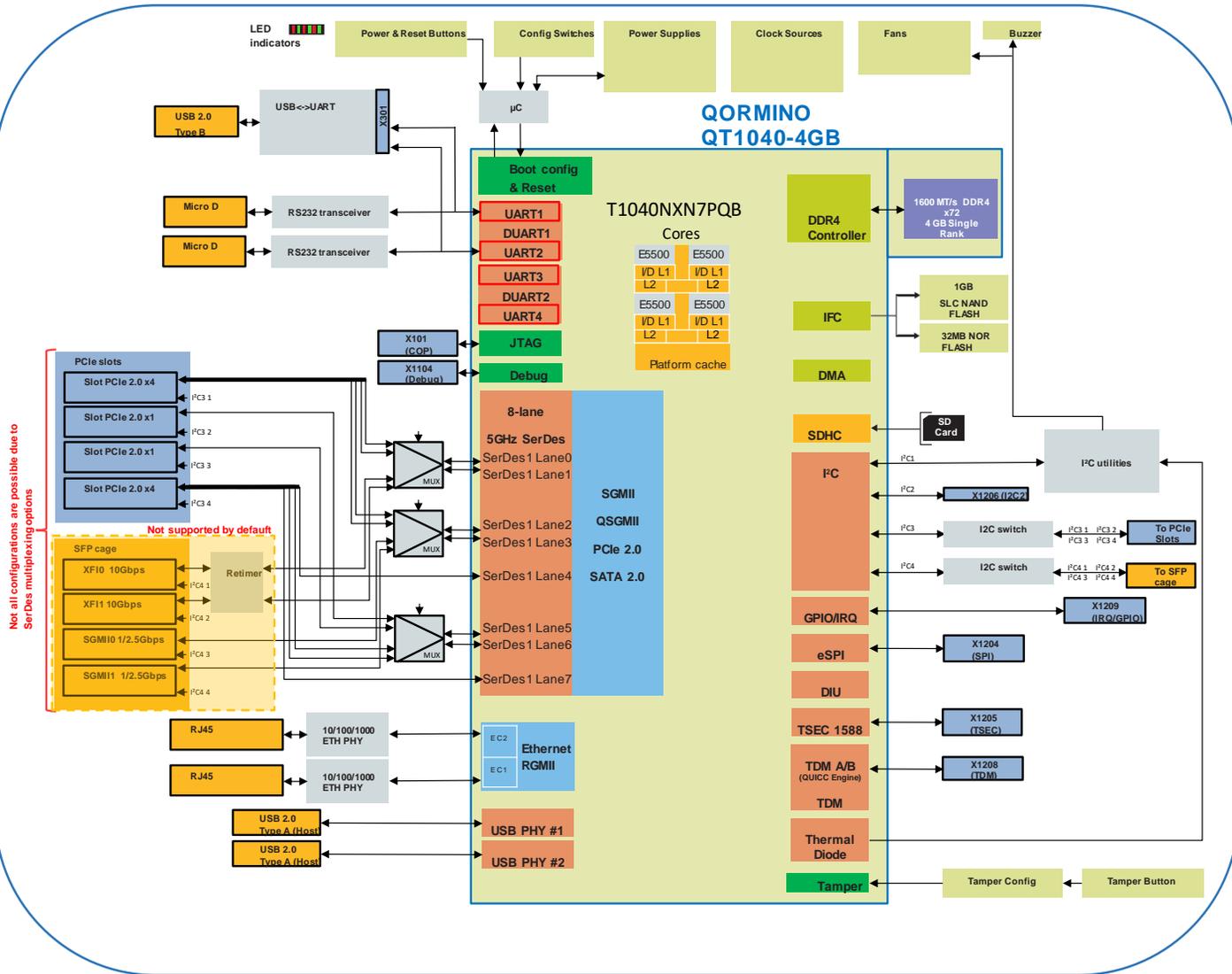
Ethernet
➢ Two 10/100/1000 Mbps Ethernet links with RJ45 connectors

PCI Express
➢ Two PCIe 2.0 x4 connection*
➢ Two PCIe 2.0 x1 connections*

(*) Not all configurations possible due to SerDes multiplexing options of T1040 processor

USB
➢ Two USB 2.0 type A (host) connections

Serial
➢ Two Serial RS232 interfaces with Micro-D connectors, which can alternatively be used as Virtual COM Ports (VCP) through one USB 2.0 type B connector

Other peripheral interfaces
➢ One SD card slot
➢ One SPI interface
➢ One I²C interface
➢ Two TDM interfaces
➢ Interrupt / GPIO connector
➢ IEEE 1588 connector

QT1040-4GB-DK Internal View
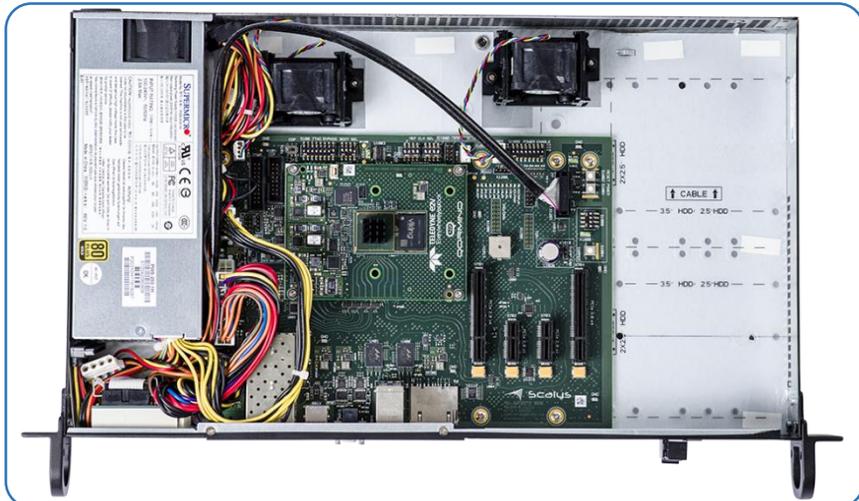
QT1040-4GB-DK Front Panel View