

DT4CS Platform

T4240 Multi-Function Platform

Overview

The Dual T4240 Communication Platform board is built with the dual Freescale QorIQ T4240 communication processor.

The T4240 QorIQ multicore processor combines 12 dual-threaded e6500 Power Architecture® processor cores for a total of 24 threads with high performance data path acceleration logic and network and peripheral bus interfaces required for networking, storage, telecom/datacom, datacenter, wireless infrastructure, military, and aerospace applications.

The DT4CS supports two PCI Express® slots, as well as an SD/MMC card slot and two USB 2.0 ports. These components, integrated with the T4 family, makes it ideal platform for target applications. The DT4CS memory supports max 48 GB of DDR3 at 1866 MHz, 128 MB of NOR flash, and a 512 Kbit I2C EEPROM.

The DT4CS is pre-loaded with the Embedded Linux® Essentials for QorIQ processors with data path acceleration software development kit. This kit includes a 64-bit SMP Linux kernel, hugeTLBfs for applications with a large memory footprint, user space Data Path Acceleration Architecture (DPAA) for high-performance packet handling, u-boot, the GCC tool chain and virtualization support, among many other features. This server is also available from VVDN Technologies in production volumes. For more information, visit www.theopenservers.com

The T4240 processor contains the e6500

core, built on Power Architecture® technology, offering speeds of 1500–1800 MHz. It has a three-level cache hierarchy with 32 KB of instruction and data cache per core, 6 MB L2 cache clustered in banks of four cores allowing efficient sharing of code and data within a multicore cluster, and a 1.5 MB CoreNet platform cache. I/O includes 32 SerDes lanes running at up to 10 GHz, multiplexed across four PCI Express controllers (up to two at Gen3), up to eight Gigabit Ethernet interfaces (XFI, XAUI, 10Gbase or HiGig), up to two Gigabit Ethernet interfaces (SGMII), Serial RapidIO® 2.0 controllers configured in x2,x4 mode and dual SATA HDD and dual PCIe NVMe SSD's interfaces. SATA provides high speed, cost efficiency storage options for statistics and large databases.

The T4240 processor supports three 64-bit DDR3 and DDR3L (low power) SDRAM memory controllers with ECC support running at up to 1867 MHz data rate. It includes two USB 2.0 interfaces (including PHY), an SD/MMC interface. It also includes the accelerator blocks collectively known as the DPAA that offload various tasks from the core, including routine packet handling, security algorithm calculations, compression, decompression and pattern matching.

Target Applications

- Secure access point
- Security gateways
- Secure network attached storage
- SSL , IPSec

Top View



Front View



Rear View



DT4CS Key Features

Processor

- Freescale Dual T4240 QorIQ multicore processor dual-threaded e6500 Power Architecture®

Operating System

- Linux Operating System

Memory

- Up to three 64-bit DDR3SDRAM memory controllers per T4240
- ECC and interleaving support with 1.867 GT/s data transfer rate
- 6 DIMM slots, DDR3 memory
 - ⇒ Architecture: Up to 1866 MT/s, DDR3 DIMMs
 - ⇒ Maximum RAM: Up to 48GB (in Total)
 - ⇒ Available RAM Size : 4GB/6GB/12GB/24GB/48GB

PCI Express®

- PCIe x4 Gen3
 - ⇒ Configured in x4 mode using SerDes configuration
 - ⇒ Can support up to Gen3
 - ⇒ x4 PCIe NVMe

Embedded Hypervisor (Optional)

- Power Management
- Openstack icehouse included

Storage

- SATA 3.0 HDD
 - ⇒ 2.5 Inch hot plug SATA HDD
- PowerEdge Express Flash NVMe PCIe SSD
 - ⇒ 2.5 Inch up to 400GB hot-plug PCIe NVMe SSD

Drive Bays

- Internal hard drive bay and hot-plug backplane
 - ⇒ Two 2.5 Inch SATA 3.0 HDD
 - ⇒ Two 2.5 Inch PCIe NVMe

Network Controller

- Two 1 Gb in Copper port,
- Eight 10Gb in SFP+ Fiber port

Inter-processor Communications

- One SRIO X4 ports for inter processor communication with Baud rate of 5G

Power

- Universal AC Input, 600W

Availability

- ECC memory
- Hot-plug drives
- Hot-plug redundant input power supplies
- Single Device Data Correction (SDDC)
- Support for high availability clustering and virtualization
- Proactive systems management alerts

Others

- LEDs for power and Ethernet link and active
- JTAG for debugging
- I2C- Serial EEPROM

Chassis

- Form Factor: 1U
- Height- 43mm, Height - 558mm , Width-482.2mm

Ready-to-Use Design

The DT4CS can be ordered from www.theopenservers.com which is powered by VVDN Technologies. The kit includes a fully tested QorIQ main processor module, Quick Start Guide, User Manual, power cord and connector cables. VVDN also makes available the complete board design files including schematics, bill of materials and GERBER files at no charge.

