**High Performance, Dual Port 1 GbE Unified Wire Adapter**

Enables TCP, UDP, iSCSI, iWARP, and FCoE Offload over Single Unified Wire with SR-IOV, EVB/VNTag, DCB

**Overview**

Chelsio’s T502-BT is a dual port 1 Gigabit Ethernet Unified Wire adapter with PCI Express 3 host bus interface, optimized for storage, cloud computing, HPC, virtualization and other data center applications.

The fifth-generation T5 ASIC technology from Chelsio provides the highest performance available and dramatically lowers host-system CPU communications overhead that offloads TCP/IP, iSCSI, FCoE and iWARP RDMA processing from its host system. The T502-BT uses the same T5 engine that powers the 10G and 40G adapter versions. It supports the same complete suite of offloaded protocols, traffic management and rich server adapter feature set.

**The Unified Wire Solution**

The T5 ASIC enables a unified wire for LAN, SAN, and cluster traffic, built upon a combination of high bandwidth and low latency architecture along with a complete set of storage and cluster protocols operating over Ethernet (iSCSI, FCoE, and iWARP). The T502-BT adapter allows converging all networking needs on a single adapter family, complete from 1Gb to 40Gb speeds, greatly simplifying maintenance, management and deployment tasks.

FCoE and iSCSI support in the T502-BT benefits from high reliability features that include memory ECC, datapath CRC and T10-DIX in addition to the checksums and CRC available at different protocols layers. iSCSI and FCoE provide a transition path from legacy SANs to converged networks.

The adapter supports IEEE 802.3ad link aggregation/failover features, as well as patented inter-adapter failover techniques that make it ideal for critical network applications requiring redundancy and high-availability capabilities.

T502-BT also includes an integrated Traffic Manager for robust flow control, traffic management, and QoS.

T502-BT Ethernet-only networking reduces the data center’s cost in network adapters, cables, switches, rack space, power, equipment spares, management tools, planning, networking skills and installation.
Fifth-Generation Protocol Offload Engine
The T5 is Chelsio’s fifth-generation TCP offload (TOE) design, fourth-generation iSCSI design, and third-generation iWARP (RDMA) implementation. With support for the 8 Gbps Gen 3 data rate, the T5 ASIC PCIe interface provides 64 Gbps of raw bandwidth to the server. T5 also provides support for PCIe SR-IOV virtualization with embedded virtual switch.

Complete and Flexible TCP Offload
The T5 has hundreds of programmable registers for protocol configurations, RFCs, and offload control. The T502-BT can offload processing per connection, per-server, per-interface, and globally and simultaneously tunnel traffic from non-offloaded connections to the host processor for the native TCP/IP stack to process. The T502-BT provides a flexible zero-copy capability for regular TCP connections, requiring no changes to the sender.

Packet Switching and Routing
T502-BT integrates a high performance packet switch, which allows switching traffic from any of the input ports to any of the output ports (wire-to-wire) and from any of the output ports to any of the input ports (host-to-host).

Robust, Proven Solution
Subjected to thousands of hours of compatibility testing, over a decade of stress testing by several OEM test suites and production deployment in servers, storage systems, and cluster computing, Chelsio’s robust, stable protocol offload technology delivers proven performance in a wide range of environments.

Software Drivers
Chelsio offers a full suite of protocol software drivers with the T502-BT adapters. See www.chelsio.com/support for the latest information. The software supports operation in both protocol-offload and non-offload modes.

Ordering Information
Model: T502-BT
Physical Interface: Dual port 1GBASE-T (RJ-45)
Connector: Cat-5
Media: Twisted pair

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