

# TN9310

## 10GbE SFP+ Network Adapter Card

Low Power - Low Area - Low Cost

### 10 Gigabit Performance!

With only 4.12 Watts maximum power consumption (including the optical module in full duplex), the TN9310 offers the lowest power consumption and the best cost solution in the market today.

Targeted at high-end Workstations and low cost Application Servers, which seek to service the increasing demand for higher network bandwidth, while maintaining low power and cost budgets.

### Overview

The TN9310 Network Adapter reference design hosts the Tehuti's new 3rd generation TN4010 controller, an optimized 10 Gigabit Ethernet MAC designed for low-power, low-cost, single-port applications required in application servers, high-end workstations and personal computers.

The TN4010 MAC is paired with the APM QT2025 transceiver, a single-port, low-power, high-performance 10 Gigabit Ethernet PHY.

This combination creates a new gateway to cost-conscious consumer applications, as well as to intensive data environments.

The Network Adapter complies with common 10GbE SFP+ optical & Direct Attached Copper modules.

### Key Features

- Low Cost, Low Power, 10 Gigabit performance in a low profile PCIe form factor
- PCI Express Gen-2 x4 Host Bus Interface
- 16K Jumbo Frames
- IP, TCP, UDP checksum offloading
- RMON statistics
- IEEE 802.1Q Tagged VLAN
- Virtual NIC support
- Reduced CPU utilization and improved throughput
- Small size: 82mm X 62mm
- Supports common 10GbE SFP+ optical and Direct Attached Copper modules

## TN9310: 10GbE SFP+ Network Adapter Card

| Features   | Benefits   |
|--|--|
| <b>PCI Express Host Bus Interface</b> <ul style="list-style-type: none"> <li>• PCI Express Rev 2.0 specification (5 GT/s)</li> </ul>   | <ul style="list-style-type: none"> <li>• Standard high performance bus interface</li> <li>• Supports x4, x2, x1 lanes</li> </ul>   |
| <b>Reduced System complexity</b> <ul style="list-style-type: none"> <li>• 1Mbit internal memory</li> <li>• Internal OTP</li> </ul>   | <ul style="list-style-type: none"> <li>• No on-board DRAM required</li> <li>• No Flash/EEPROM required on board</li> </ul>   |
| <b>Ethernet and Media support</b> <ul style="list-style-type: none"> <li>• Full IEEE Std 802.3ae Compliant</li> <li>• Jumbo frame support (16K)</li> <li>• IEEE 802.1q VLAN support</li> <li>• RFC2819 RMON MIB statistics</li> <li>• Multicast</li> <li>• IEEE 802.3ad Link Aggregation support</li> </ul>  | <ul style="list-style-type: none"> <li>• Higher network utilization for large data transfers</li> <li>• Traffic isolation for security</li> <li>• Generic statistics monitoring</li> <li>• Reduce network traffic</li> <li>• Maximize network throughput via teaming</li> </ul>  |
| <b>OptiStrata™ Accelerator Engine</b> <ul style="list-style-type: none"> <li>• Integrated OptiStrata™ Processor</li> </ul>   | <ul style="list-style-type: none"> <li>• Flexibility in implementing packet processing algorithms and supporting future TCP/IP stack implementations</li> </ul>  |
| <b>Performance enhancements</b> <ul style="list-style-type: none"> <li>• Microsoft Scalable Networking</li> <li>• Receive-side scaling (RSS)</li> <li>• MSI</li> <li>• IP, TCP and UDP checksum offloading</li> <li>• Large Send (up to 64 KB)</li> <li>• Low Latency (&lt; 4 uS)</li> </ul>   | <ul style="list-style-type: none"> <li>• Reduced host bus traffic</li> <li>• Efficiently support multi-core systems</li> <li>• Minimize overhead and eliminates interrupt sharing</li> <li>• Lower CPU utilization</li> <li>• Increased network throughput</li> <li>• Ideal for high performance computing applications</li> </ul> |
| <b>Driver support</b> <ul style="list-style-type: none"> <li>• Microsoft Windows Server 2012, Microsoft Windows Server 2012 R2, Microsoft Windows Server 2008 R2, Microsoft Hyper-V, Microsoft Windows 10 Pro Insider Preview 64 bit, Microsoft Windows Win 8.1 32/64 bit, Microsoft Windows Win 7 32/64 bit</li> <li>• Linux 2.6.x, Linux 3.x</li> <li>• vmware® ESXi 5.x, ESXi 6.0</li> <li>• Apple OS X 10.10.3 or later</li> </ul> | <ul style="list-style-type: none"> <li>• Short time to market</li> <li>• Seamless software integration</li> <li>• No interference with existing TCP/IP implementations</li> <li>• Advanced multi-processor platforms support</li> </ul>  |
| <b>Manageability</b> <ul style="list-style-type: none"> <li>• Comprehensive Built-In self-test</li> </ul>  | <ul style="list-style-type: none"> <li>• Improves yield, increases reliability, and lowers overall cost</li> <li>• Optimizing system management &amp; thermal design</li> </ul>  |
| <b>Physical and Electrical</b> <ul style="list-style-type: none"> <li>• Voltage: 3.3V &amp; 12.0V</li> <li>• Power consumption (Full bidirectional traffic, optical transceiver included): 10G speed: 4.12W</li> </ul>   | <ul style="list-style-type: none"> <li>• Operating Temperature 0 ÷ C to 70 ÷ C</li> <li>• Storage Temperature -40 ÷ C to 85 ÷ C</li> <li>• Green &amp; RoHS Compliant</li> <li>• Size: 82mmX62mm</li> </ul>  |