

TN9210-TB2

Ethernet 10GBase-T to Thunderbolt™ 2 Adapter

Low Power - Low Area - Low Cost

10 Gigabit Performance!

With only 8.0 Watts typical power consumption (full duplex to 100 meters), the TN9210-TB2 is the first bus-powered 10GBase-T Thunderbolt™ 2 adapter prototype available. It offers attractive cost and small size required for the consumer market.

The ideal solution for Apple products, thin Ultrabook computers and other Thunderbolt™ technology equipped devices, which seek to communicate with an existing Ethernet infrastructure while coping with the increasing demand for higher network bandwidth.

Overview

The TN9210-TB2 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 connectivity. The TN4010 MAC is paired with the Marvell® Alaska® 88X3110 transceiver, a low power, high-performance 10 Gigabit Ethernet PHY, to enable tri-speed connectivity over low-cost standard Cat-6a Ethernet cabling.

Thunderbolt™ is the fastest, most versatile connection to your PC with transfer speeds up to 10Gbps delivered across two bi-directional channels*. The combination creates a new gateway to cost-conscious consumer applications, as well as to intensive data environments.

Key Features

- Tri-Speed 10G/1G/100M Base-T
- Low Cost, Low Power, 10 Gigabit performance
- Standard Cat-6a Cabling (Cat-5e and Cat-6 compliant to Link Segment specifications)
- EEE (Energy Efficient Ethernet)
- 16K Jumbo Frames
- IP, TCP, UDP checksum offloading
- RMON statistics
- IEEE 802.1Q Tagged VLAN
- Reduced CPU utilization and improved throughput
- Thunderbolt™-2 technology
- Bridges Thunderbolt™ connector to Ethernet networks
- OS-X and Windows drivers

TN9210-TB2: Ethernet 10GBase-T to Thunderbolt™ 2 Adapter

Features	Benefits
Thunderbolt™ Cable Interface <ul style="list-style-type: none"> Thunderbolt™ 2 cable Interface (20 Gb/s) 	<ul style="list-style-type: none"> 10G Ethernet communication leverages the Thunderbolt™ 2 technology capabilities
Reduced System complexity <ul style="list-style-type: none"> 1Mbit internal memory Internal OTP 	<ul style="list-style-type: none"> No on-board DRAM required
Ethernet and Media support <ul style="list-style-type: none"> Full IEEE Std 802.3an Compliant 10Gb/1000Mb/100Mb auto negotiation support IEEE 802.3az support (EEE – Energy Efficient Ethernet) Jumbo frame support (16K) IEEE 802.1q VLAN support RFC2819 RMON MIB statistics Multicast Up to 100 meters on CAT 6a cable 	<ul style="list-style-type: none"> 10Gb/s over unshielded twisted pair (UTP) Backward compatibility for wide range of systems Power reduction on idle times Higher network utilization for large data transfers Traffic isolation for security Generic statistics monitoring Reduce network traffic Virtually no distance limitations
Thunderbolt™ 2 technology Media support <ul style="list-style-type: none"> Runs at 20Gbps bi-directional Supports raw 4K video file transfer and display simultaneously Data and video through a single compact port Cables come up to 3m 	<ul style="list-style-type: none"> Thunderbolt™ 2 technology brings workflow versatility to content creators with simultaneous 4K video delivery and editing Display raw 4K video and backup content at the same time Faster digital content archiving and back up Transfer the total production quantity of a typical 4K TV drama in less than an hour
Performance enhancements <ul style="list-style-type: none"> Microsoft Scalable Networking Receive-side scaling (RSS) MSI IP, TCP and UDP checksum offloading Large Send (up to 64 KB) Low Latency (< 4 uS) 	<ul style="list-style-type: none"> Reduced host bus traffic Efficiently support multi-core systems Minimize overhead and eliminates interrupt sharing Lower CPU utilization Increased network throughput Ideal for high performance computing applications
Driver support <ul style="list-style-type: none"> Microsoft Windows 8.1 32/64 bit Microsoft Windows 7 32/64 bit Apple OS X 10.10.3 or later 	<ul style="list-style-type: none"> Short time to market Seamless software integration No interference with existing TCP/IP implementations
Physical and Electrical <ul style="list-style-type: none"> Voltage: 12 volts from Thunderbolt™ cable or from optional external Power Supply. Power consumption (Full 10G bidirectional traffic, 100m cable): 8.0 Watt 	<ul style="list-style-type: none"> Operating Temperature 0 ÷ C to 70 ÷ C Storage Temperature -40 ÷ C to 85 ÷ C Green & RoHS Compliant Size: 120mmX50mm