



# TILEncore-Gx72

## Intelligent Application Adapter

Eight 10 Gigabit Ethernet Ports with PCI Express 3.0

The TILEncore-Gx72™ intelligent application adapter is a very high-performance networking and computing platform designed to unleash the performance and throughput of embedded systems and servers. The massive computing power of the TILE-Gx™ processor is complemented with 80Gbps of Ethernet I/O and a large memory capacity in a compact, power-efficient PCIe form factor, enabling both network endpoint or “bump in the wire” configurations.

The TILEncore-Gx72 platform works with Mellanox’s industry-leading Multicore Development Environment™ (MDE) software, providing standard Linux development and ease of programming across the entire line of TILEncore-Gx™ adapters, including models with 36 and 72 cores.

### POWERFUL COMPUTING PLATFORM

The TILEncore-Gx72 is comprised of the TILE-Gx processor (and its memory subsystems) and the interface subsystem with SFP/SFP+ connectors. The 72-core TILE-Gx72™ processor brings wire-speed, 80Gbps deep packet processing to the most demanding applications. The processor is supported by up to 16GBytes of DDR3 memory with ECC.

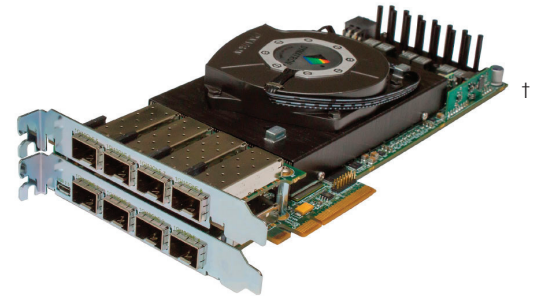
The platform is typically installed into a Linux x86 host desktop or rackmount server and powered by the 6-pin ATX power connector. The TILEncore-Gx72 can also be configured to operate in a standalone mode without the use of its PCIe edge connector.

### FLEXIBLE I/O

The rear plate includes eight high-speed Ethernet ports (SFP/SFP+) and each can be configured for 1Gbps or 10Gbps operation. In addition, a Micro USB 2.0 port is included to support debug and management operations. An 8-lane PCIe Gen3 edge connector interfaces to the host system, offering up to 64Gbps of peak throughput.

### TYPICAL USER APPLICATIONS

- 8x 10 Gbps intelligent offload Network Interface Card (NIC) for quick hardware deployment
- PCIe-based accelerator card for processorintensive offloads
- Platform for TILE-Gx software development and benchmarking



## HIGHLIGHTS

### BENEFITS

- Massive computing power
- Large memory capacity
- Virtualization acceleration
- High-performance networking and computing platform

### FEATURES

- Supports INTx and MSI interrupts across PCIe
- On-board ambient and die temperature sensors
- RS-232 (UART) port accessed via a 3-pin header
- 12V power monitoring via software

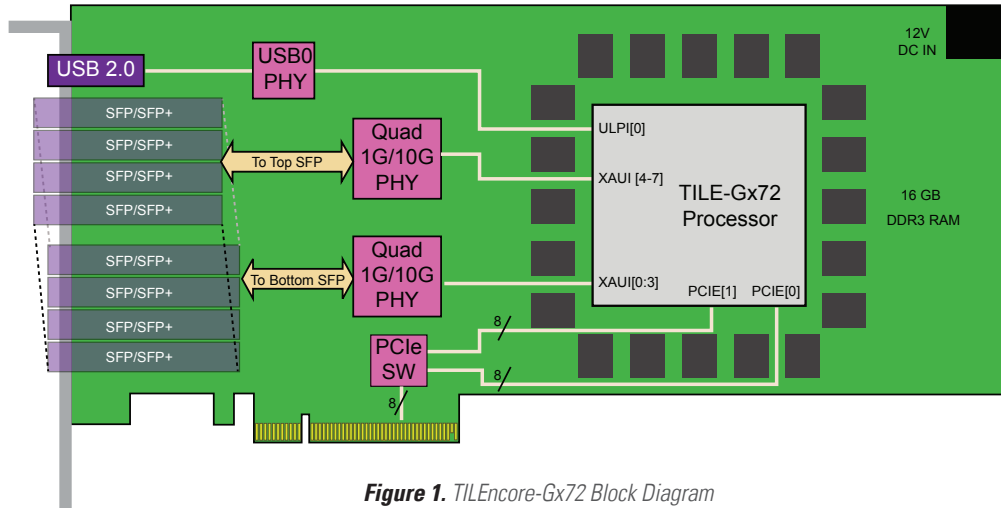


Figure 1. TILeCore-Gx72 Block Diagram

## SPECIFICATIONS

### General

- Full-height, 3/4-length, two-slot PCI Express
- RoHS-6 compliant per EU 2011/65/EU

### PCIe Interface

- Eight-lane PCIe 3.0, Gen3 compliant
- Fall-back to 4, 2, or 1 lane
- Fall-back to Gen2 mode

### Network Interfaces

- Flexible interface capability
- Eight SFP/SFP+ ports, each configurable as 1Gbps or 10Gbps Ethernet

### Console Interface

- One USB 2.0 endpoint port for development and debug

### Memory

- Four memory interfaces, each connected to a “soldered-down” discrete memory implementation for DDR3 with ECC
- Up to DDR3-1600, 16GB total

### Technical Features

- Supports INTx and MSI interrupts across PCIe
- On-board ambient and die temperature sensors
- RS-232 (UART) port accessed via a 3-pin header
- 12V power monitoring via software

### Cooling

- Memory and cooling: passive fansink/heatsink
- Requires\*\*:

  - Minimum 200lfm @ maximum 50°C with no adjacent card
  - Minimum 400lfm @ maximum 50°C with adjacent card

### Indicators

- LEDs on rear plate for Ethernet link status and activity

### Power

- Powered by standard 6-pin Molex “ATX power” connector, 12V
- Typical platform power dissipation: 95W @ 1.0GHz

### Environmental

- Operating temperature: 0°C to 50°C
- Storage temperature: -40°C to 70°C
- Humidity: 5% to 95% RH non-condensing

### Physical Specifications

- Board height: 4.38 in (11.1 cm)
- Board length: 9.40 in (23.9 cm)
- Bracket height: 4.72 in (12 cm)

\* This section describes hardware features and capabilities. Please refer to the driver and firmware release notes for feature availability.

\*\* The 50°C temperature represents the ambient temperature inside the chassis.

Table 1 - Part Number and Description

OPN	Description
TLB4-07280-10-PCIE-8S10-16-P-GCE	TILeCore adapter with 1.0GHz Gx72 processor, 8x10GE SFP/SFP+ ports, 16GB, with crypto acceleration. Passive heat sink.