

Unprecedented Computing Capabilities and Lowest Power Consumption in a 1U Appliance

The TILEmpower application hosting platform delivers the industry’s highest performance processing for demanding applications in networking and digital multimedia. The compact 1U device features Tiler’s powerful TILEPro64™ processor with expandable memory and multiple and 1Gb network interfaces, speeding time-to-market for embedded applications. The 64-core TILE64 processor’s versatility allows it to perform a variety of computing-intensive tasks such as:

- Network flow traffic classification
- Deep Packet Inspection (DPI)
- Quality of Service (QoS) Provisioning
- Video stream processing
- Video and audio encoding / transcoding

The TILEmpower platform offers multiple configurations for its high-speed interfaces, including a model with dual 10Gb plus dual 1Gb ports and a model with one 10Gb plus fourteen 1Gb ports.



The baseline platform provides two 10/100/1000 Ethernet ports for management connectivity and an 8-lane PCI Express 2.0 expansion slot that allows accelerator or advanced I/O cards to be added. For applications that require mass storage, the TILEmpower supports two optional internal SATA hard disk drives.

Target Applications

Advanced Networking:

The TILEmpower platform provides the Ethernet line interfaces as well as the entire dataplane processing for intelligent network services such as:

- Unified Threat Management (UTM)
- Intrusion Prevention (IPS/IDS)
- Network Security Appliances
- Network Monitoring and Forensics
- L4-7 deep packet inspection

Digital Video:

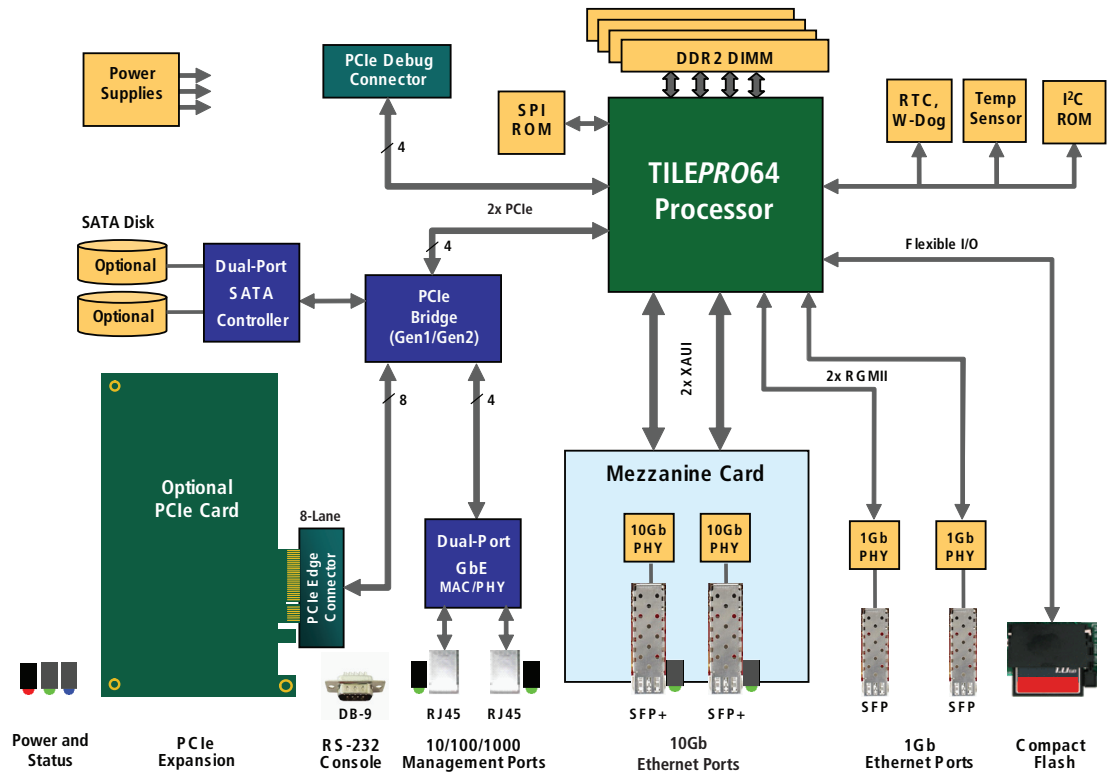
The TILEExpress-64 card also excels at digital video processing, easily taking the place of multiple DSPs as well as the networking components for:

- Broadcast “Head-End” media services
- Video-on-Demand (VoD) Servers
- Video surveillance (Network DVR)
- Audio and video transcoders
- Video conferencing bridges

	Features	Enables
Massive Computing Power in a Small Form Factor	<ul style="list-style-type: none"> • TILEPro64 processor provides 64 general purpose processor cores for compute-intensive applications 	<ul style="list-style-type: none"> • 15Gbps Snort® processing • 20+ Gbps nProbe • Multiple streams of H.264 high definition video encode
Powerful Software Approach	<ul style="list-style-type: none"> • C / C++ programming model • Supports Linux and SMP Linux • Standard tool chain based on Eclipse and GNU 	<ul style="list-style-type: none"> • Easily leverages existing code • Take advantage of huge body of Open Source applications • A familiar programming environment that speeds development
Rich I/O Capabilities	<ul style="list-style-type: none"> • Modular high-speed interfaces including multiple 1Gb and 10Gb ports • Two 1Gbps front panel Ethernet ports (SFP) • Two 10/100/1000 front panel Ethernet ports (RJ45) • Front panel UART port 	<ul style="list-style-type: none"> • >20Gbps of wire-speed I/O • 10Gbps flow-through or 20Gbps endpoint • Unified platform combines processing and network connectivity
Memory Options	<ul style="list-style-type: none"> • Standard 8 GBytes of socketed DIMM DDR2 memory • Optional on-board Flash for self-contained booting 	<ul style="list-style-type: none"> • Industry-standard upgradable memory modules • Flexible memory options for a variety of applications • Appliance can boot from Flash or internal disk
PCIe Card Format	<ul style="list-style-type: none"> • Standard rack-mounting form factor • Integrated AC power supply 	<ul style="list-style-type: none"> • Instant hardware compatibility enables rapid time-to-market • Low operating lifecycle (OpEx) cost

TILEmpower Platform – Product Brief

TILEmpower Block Diagram



Specifications

General	<ul style="list-style-type: none"> Form factor: 19" rack chassis, 1U height RoHS-6 compliant per EU 2002/95/EC 	Technical Features	<ul style="list-style-type: none"> PCI-Express expansion card: Gen2, x8 short/long card Optional internal single or dual SATA disk drive On-board dual temperature sensor Real-time clock and watchdog timer
Processor	<ul style="list-style-type: none"> Tilera 64-core TILEPro64 866 MHz core frequency, 800MHz DDR2 memory 	Power	<ul style="list-style-type: none"> Integrated AC power supply: 120/240VAC, 50/60Hz Typical power dissipation: 150W Cooling: Redundant internal fans, with front to rear airflow
Baseline Interfaces	<ul style="list-style-type: none"> Two 1Gbps Ethernet (SFP) Two 10/100/1000Gbps Ethernet mgmt ports (RJ45) RS-232 UART console port (DB-9) 	Environmental	<ul style="list-style-type: none"> Operating Temperature: 0° to 40°C Storage Temperature: -40° to 70°C Humidity: 10% to 90% RH non-condensing
Modular Interface Options	<ul style="list-style-type: none"> Two 10Gbps Ethernet (SFP+) One 10Gbps Ethernet (SFP+) and twelve 1Gbps Ethernet (SFP) 	Physical Specifications	<ul style="list-style-type: none"> Height: 4.45 cm (1.75 in) Width: 48.3 cm (19 in) Depth: 54.1 cm (21.3 in) Weight: 15 kg (33 lb)
Memory	<ul style="list-style-type: none"> Four DDR2 DIMM sockets, 2GB to 16GB total capacity PC2-6400 (DDR2-800) memory speed Compact Flash boot and data storage (card not included) 		
Indicators	<ul style="list-style-type: none"> Network port indicators for link and traffic Power and software-controlled LEDs on front panel 		

Ordering Information

Part Number	Processor	Processor Frequency	I/O Interfaces	Mgmt Ports	Memory Installed	Hard Disk Drives
TLB-36400-9-RM1U-2X10-8-GC	TILEPro64	866 MHz	Two 10G SFP+, Two 1G SFP	2	8 GBytes	None
TLB-36400-9-RM1U-2X10-16-GC	TILEPro64	866 MHz	Two 10G SFP+, Two 1G SFP	2	16 GBytes	None
TLB-36400-9-RM1U-1X10-14X1-8-GC	TILEPro64	866 MHz	One 10G SFP+, 14 1G SFP	2	8 GBytes	None
TLB-36400-9-RM1U-1X10-14X1-16-GC	TILEPro64	866 MHz	One 10G SFP+, 14 1G SFP	2	16 GBytes	None

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