

PCIe Expansion

TRENTON PCI EXPRESS EXPANSION SYSTEMS



Trenton PCIe Expansion System

Shown with a 20-slot PCI Express expansion backplane and a host server motherboard

FEATURES

- Secure PCI Express link expansion with any motherboard-based host server
- Extends PCI Express communication bus from the host server to remote I/O cards
- Simplifies host server motherboard I/O card support in telecom, military & defense, industrial automation, storage and visualization applications
- x16 expansion cable delivers 20Gb/s of bandwidth between host server and the target expansion chassis
- Wide variety of target backplane choices to support multiple I/O card interfaces including PCI Express, PCI-X and PCI option cards
- Target system choices include 3U, 4U and 5U rackmount expansion chassis
- Made in U.S.A. for system longevity and dependability



PCI EXPRESS EXPANSION OVERVIEW:

Trenton Systems provides a variety of different tools to solve the system design issue of supporting a large number of I/O cards in a motherboard-based server. A Trenton Systems PCIe expansion chassis ships with the Trenton PED8044 target card installed in the SHB slot of a standard PICMG 1.3 backplane along with the host card that you plug into the x16 PCIe slot in your host server. In most applications, a customer would install the Trenton PEU8039 host card in an available x16 PCI Express slot in their current server platform and connect the provided 1M or 3M x16 PCIe 2.0 interconnect cable to the pre-installed target card in a Trenton 3U, 4U or 5U rackmount expansion chassis. Trenton's PCI Express expansion chassis offer a variety of backplane options to expand the I/O capabilities of your host server. To take advantage of Trenton's end-to-end system longevity and dependability you may elect to have Trenton Systems supply a complete solution featuring one of our long-life motherboard-based host servers, a rugged, fully integrated PCI Express expansion chassis and an interconnect cable. The choice is yours!

TRENTON PCI EXPRESS PRODUCT CONFIGURATION OPTIONS:



- Rugged, lightweight aluminum expansion chassis
- 3U rackmount height / 20"(508mm) chassis depth
- Includes PED8044 target card
- 14-slot backplane options for PCIe, PCI-X, PCI & ISA cards
- Choice of 1M or 3M x16 PCIe expansion cable
- PEU8039 host card included and packed separately



- Rugged, lightweight aluminum expansion chassis
- 4U height / 16.25"(413mm) & 20"(508mm) chassis depths
- Includes PED8044 target card
- 14-slot backplane options for PCIe, PCI-X, PCI & ISA cards
- Choice of 1M or 3M x16 PCIe expansion cable
- PEU8039 host card included and packed separately



- Rugged, lightweight aluminum expansion chassis
- 5U height / 18"(457mm) to 23"(584mm) chassis depths
- Includes PED8044 target card
- 20-slot backplane options for PCIe, PCI-X and PCI cards
- Choice of 1M or 3M x16 PCIe expansion cable
- PEU8039 host card included and packed separately

PCIe Expansion Chassis Options (3U, 4U and 5U Target Chassis)

TTX5100 Expansion Chassis

- PED8044
- 5U chassis
- 20-slot backplane
- x16 cable



- THX2100 Host Server
- PEU8039
- 2U rackmount server
- MicroATX Motherboard

PCIe Expansion System (Integrated Target Chassis & Host Server)



PCIe Expansion Kits (PKT1 [1M] or PTK3 [3M])

TECHNICAL SPECIFICATIONS - EXPANSION CHASSIS:

MODEL NAME	DESCRIPTION	DIMENSIONS	POWER SUPPLY	PCIe STATUS LEDs
TTX3100	3U expansion system for 14-slot backplanes	19.0"/483mm (W) x 5.25"/133mm (H) x 20.0"/508mm (D)	1 - ATX/EPS Fixed	Front & Rear Panels
TTX4100	4U expansion system for 14-slot backplanes	19.0"/483mm (W) x 7.0"/178mm (H) x 16.25"/413mm (D)	1 - ATX/EPS Fixed	Front & Rear Panels
TTX4102	4U expansion system for 14-slot backplanes	19.0"/483mm (W) x 7.0"/178mm (H) x 20.0"/508mm (D)	1 - ATX/EPS Fixed	Front & Rear Panels
TTX5100	5U expansion system for 20-slot backplanes	19.0"/483mm (W) x 8.75"/222mm (H) x 18.0"/457mm (D)	1U Micro-Redundant ATX	Front & Rear Panels

TECHNICAL SPECIFICATIONS - EXPANSION CHASSIS BACKPLANE OPTIONS:

BACKPLANE OPTION	I/O CARD SLOTS SUPPORTED (1-PED8044 target card slot plus...)	3U CHASSIS	4U CHASSIS	5U CHASSIS
BPG7087	4 - x16 and 5 - x4 PCIe 2.0/1.1	x	x	
BPX6620	1 - x8 PCIe 1.1, 2 - 64-bit/133MHz and 8 - 64-bit/100MHz PCI-X	x	x	
BPG6615	1 - x16 and 4 - x4 PCIe 1.1, 2 - 64-bit/100MHz and 4 - 64-bit/66MHz PCI-X	x	x	
BPX6610	2 - x8 and 4 - x4 PCIe 1.1, 2 - 64-bit/100MHz and 4 - 64-bit/66MHz PCI-X	x	x	
BPX3/8	2 - x8 PCIe 2.0/1.1, 4 - 64-bit/66MHz and 4 - 64-bit/33MHz PCI-X	x	x	
BPG8032	17 - x16 and 1 - x4 PCIe 2.0/1.1			x
BPX6806	4 - x8 and 13 - x4 PCIe 1.1 plus 1 - x4 PCIe 2.0/1.1			x
BPX6571	1 - x8 and 1 - x4 PCIe 2.0/1.1 and 16 - 64-bit/66MHz PCI-X			x
BPX3/14	1 - x4 PCIe 2.0/1.1, 2 - 64-bit/133MHz and 12 - 64-bit/100MHz PCI-X			x

Note: Most Trenton backplanes use x16 mechanical PCI Express I/O card slot connectors regardless of the PCIe electrical interface. Contact Trenton for additional details and exception information.

TECHNICAL SPECIFICATIONS - EXPANSION CARDS AND CABLES:

PCI EXPRESS EXPANSION - SERVER HOST CARD

Model Name: PEU8039
Description: PCIe host card for PCIe over cable I/O expansion
PCIe Standard: PCI Express Base Specification 2.0 and 1.1
Card Size: 6.125" / 156mm L x 3.243" / 82.4mm H
Edge Connector: Standard x16 PCIe
Operating Temp: 0° C to 55° C
Storage Temp: -20° C to 70° C
Card Bracket: Standard height I/O card bracket
Agency Approval: CE, UL, CAN/CSA, FCC Class A (min)

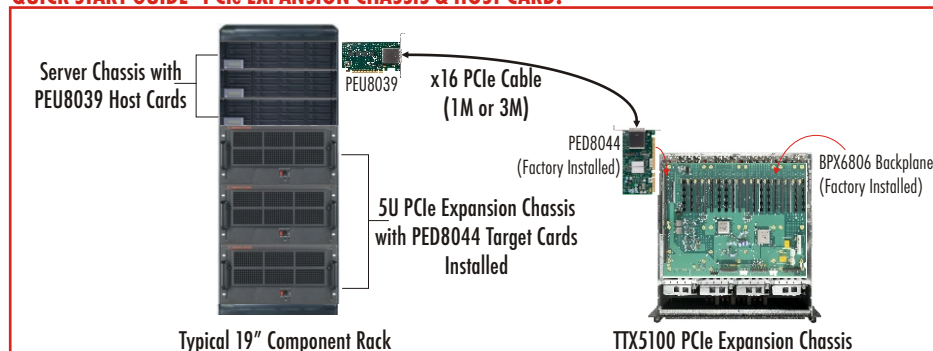
PCI EXPRESS EXPANSION - TARGET CHASSIS CARD

Model Name: PED8044
Description: PCIe target card for PCIe over cable I/O expansion
PCIe Standard: PCI Express Base Specification 2.0 and 1.1
Card Size: 6.625" / 168mm L x 3.243" / 82.4mm H
Edge Connector: Standard PICMG 1.3 SHB slot connectors A & B
Operating Temp: 0° C to 55° C
Storage Temp: -20° C to 70° C
Bracket: Standard height I/O card bracket
Agency Approval: CE, UL, CAN/CSA, FCC Class A (min)

PCI EXPRESS EXPANSION CABLES - 1M or 3M

Model Name: EXC1 or EXC3
Description: x16 PCI Express expansion cable
PCIe Standard: PCI Express Base Specification 2.0 and 1.1
Cable Lengths: 1M (39.4") or 3M (118.1")
Connectors: iPass™ Integrated Cage and Connector Assembly
Current: 1A maximum per contact
Shielded: Yes
Voltage: 30V DC (maximum)
Agency Approval: CE, UL, CAN/CSA

QUICK START GUIDE - PCIe EXPANSION CHASSIS & HOST CARD:



1. Using proper grounding and anti-static procedures, install the PEU8039 card in a x16 PCI Express slot on the host server's motherboard
2. Connect the host server chassis to the PCIe expansion chassis using the 1M, or 3M x16 PCIe expansion cable (EXC1 or EXC3)
3. Install the required I/O cards needed in the application into the backplane I/O card slots in the PCIe expansion chassis
4. Apply power to the host server and PCIe expansion chassis
5. Observe the PCIe link status LEDs on the expansion chassis

Note: The board, chassis and cable photos shown are for illustrative purposes only.

Trenton rackmount computers, industrial servers and video display wall controllers feature long-life, multi-core Intel® processors.

Trenton Systems offers complete system integration of a wide variety of standard and customer supplied operating systems and application software packages. Various Microsoft®, Linux and RTOS operating systems can be loaded on to your system by our highly skilled factory technicians. Other system integration services include the loading and testing of industry standard or COTS option cards as well as custom designed boards. Standard industry certifications and approvals for your specific system configuration are also available from Trenton Systems.

Final system weight, environmental specifications and power consumption estimates are a function of the specific system configuration. Preliminary estimates and final validated values are provided for each rackmount computer system we build.

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