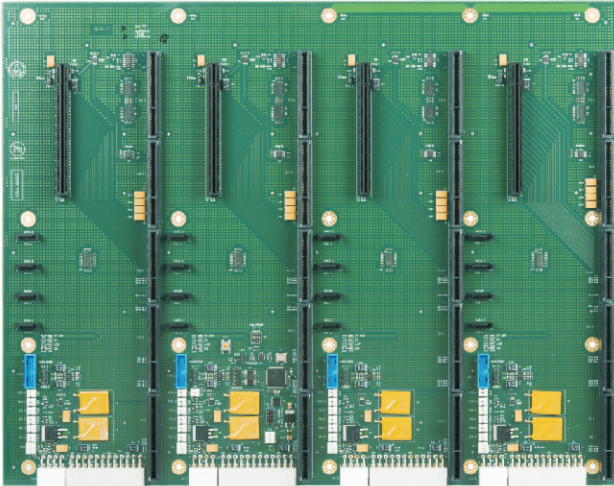


# HDB8237

## HDEC® Series FOUR-SEGMENT BACKPLANE

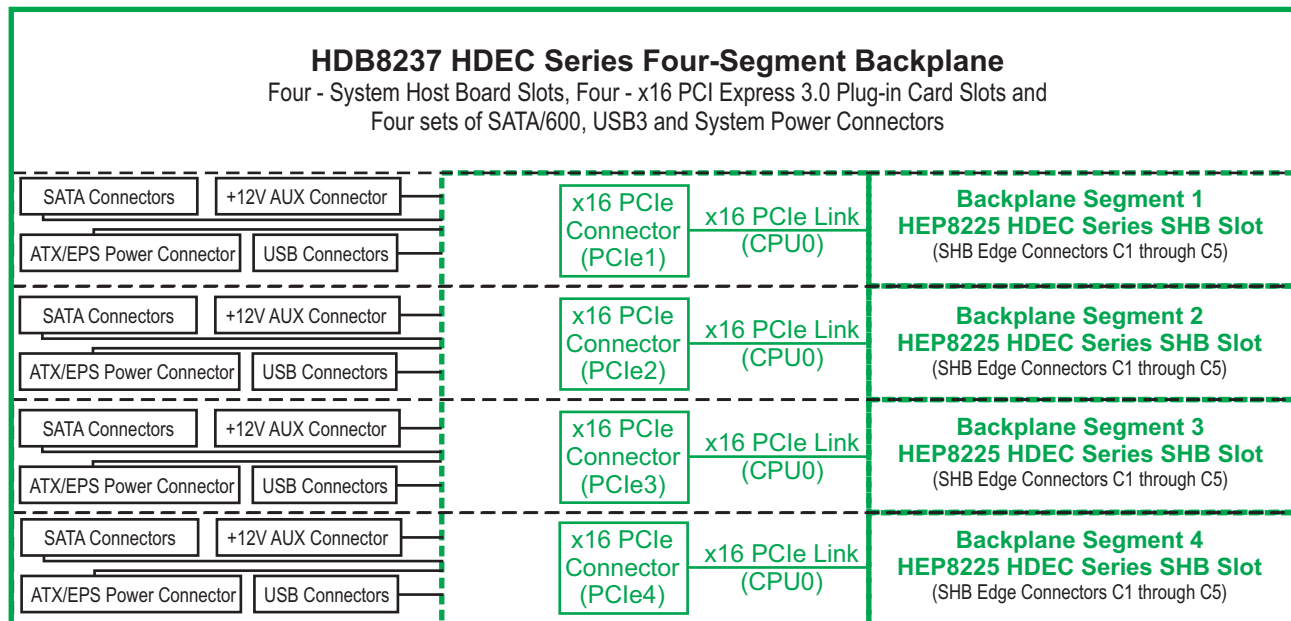


### FEATURES

- Four-segment backplane supports four independent HDEC® system host boards
- Enables four-in-one system consolidation in a single rackmount computer enclosure
- Delivers secure isolation of divergent software applications within a single, component rack space-saving, computer chassis
- Ideal for dual-processor Trenton HEP8225 HDEC Series system host boards
- A direct PCI Express GEN3 link to the SHB's processors from each plug-in option card slot maximizes data throughput speeds
- Each segment supports an industry standard PCI Express® 3.0, 2.0 and 1.1 option card
- Four x16 PCI Express 3.0 mechanical and electrical card slots total
- Each segment supports four SATA/600 and two USB 3.0 system I/O connections
- Five-year factory warranty
- Made in U. S. A.



### BLOCK DIAGRAM:



### HDEC SERIES FOUR-SEGMENT BACKPLANE:

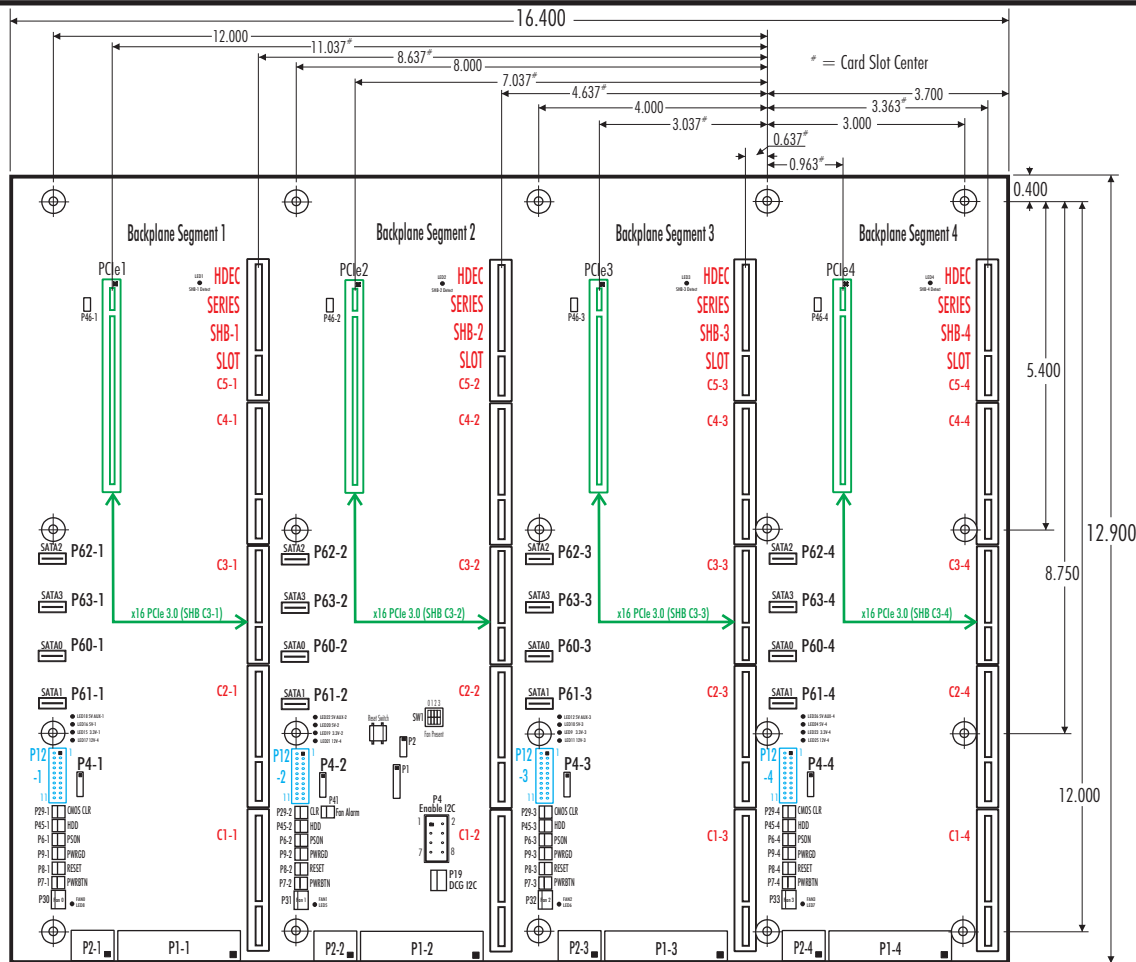
The HDB8237 HDEC Series four segment backplane provides a system integration methodology that enables four-in-one system consolidation in a single rackmount computer enclosure. This multi-system within a common enclosure integration approach enables divergent software applications to be totally isolated, yet does not require physically separate computer systems; thereby, saving on the total costs of system ownership and integration. This innovative four-segment backplane design supports an industry standard x16 PCI Express 3.0 plug-in card within each segment that interfaces directly to the processors located on that segment's HDEC Series system host board. In addition to the native x16 PCIe link for each HDB8237 backplane segment's option card slot, the dual Intel® Xeon® E5-2680 v3 processors available on an HEP8225 HDEC Series system host board provides a combined 24-cores of processing capacity within each backplane segment.

### APPLICATION EXAMPLES:

The HDB8237's mechanical design enables this four-segment HDEC Series backplane to drop into an industry standard 5U rackmount computer chassis. Expanded system I/O connections are supported by the backplane in conjunction with a compatible HDEC Series SHB like Trenton's HEP8225. The placement of each SHB slot, and the deployment of various system I/O connectors within each backplane segment, enables simplified system cabling while maximizing system airflow in order to enable long and trouble-free hardware deployments in robust computing applications. The ability of the backplane to automatically support either PCI Express 3.0, 2.0 or 1.1 cards builds an element of scalability into any system design. The backplane enhances system design flexibility by supporting the many different types of standard, plug-in PCI Express x16 option cards used in a wide variety of military, government and industrial applications.

### HDEC SERIES BACKPLANE MODEL: HDB8237

MODEL#	MODEL NAME	DESCRIPTION
8237-037	HDB8237-CRA	HDEC Series SHB compatible four-segment backplane with ATX/EPS and 12V AUX right-angle power connectors within each segment



**SUGGESTED HDEC SERIES SHB:  
DUAL PROCESSOR, HEP8225**

**ENVIRONMENTAL SPECS.:#**

Operating Temp.: 0° C to 60° C  
Storage Temp.: -40° C to 70° C  
Humidity: 5% to 90%, non-condensing

#Environmental specifications for system host boards / single board computers are usually lower than those of the backplane. Check with your SHB/SBC vendor.

The Trenton HDB8237 is a lead-free, RoHS compliant backplane.

This backplane is designed to meet worldwide EMI emissions requirements, CE conformity and immunity standards. Contact Trenton for the specific standard numbers this product.

The Trenton HDB8237 backplane is designed for UL60950 and CAN/CSA C22.2 No. 60950-00.

**HDB8237 ENGINEERING NOTES:**

1. The power connectors shown in the layout drawing represents backplane model number 8237-037.
2. All dimensions are in inches, mounting holes: 0.156" diameter, and nominal PCB thickness: 0.080"
3. Each segment uses a PCI Express 3.0 link directly from the segment's HDEC Series SHB to drive the segment's PCIe card slot. PCIe 3.0 link re-timers ensure single integrity between the SHB and the PCIe card.
4. PCIe electrical interface key: **Green** = Slot driven with a x16 PCIe 3.0 link from the HEP8225 SHB
5. In some system designs a backplane segment's PCIe card slot may not be available with higher performance processor options that require taller processor cooling solutions.

**SYSTEM I/O CONNECTIONS AVAILABLE ON THE HDB8237 HDEC SERIES BACKPLANE:**

The HDB8237 takes full advantage of the system I/O interfaces brought down to the backplane via the edge card fingers on the HDEC Series system host board. Each set of backplane segment connectors ensure the most efficient system I/O wiring possible for four-in-one embedded computer systems. (Note: the letter "n" indicates backplane segment number 1, 2, 3, or 4.)

HDB8237 Connector	Function	HDB8237 Connector	Function
P1-n	ATX/EPS power inputs from system supply	P12-n	USB3.0 header for Port0/Port1 front panel interfaces
P2-n	+ 12V AUX power inputs from system supply	P30 - P33	System fan connectors (4)
P4-n	USB 2.0 redirect	P60-n through P63-n	SATA/600 interfaces for HDD/SDDs (4)

*Product Photo Note: The photo of the HDB8237 backplane is provided for illustrative purposes only. Actual connector and mounting locations are illustrated in the backplane layout drawing.*

*HDEC is a registered trademark of Trenton Systems, Inc. All other product names are trademarks of their respective owners.*

Copyright ©2015 by TRENTON Systems Inc. All rights reserved

**ADDITIONAL SYSTEM INTERFACE CONNECTIONS, and LEDs:**

There are a number of additional connectors, and LEDs available on the HDB8237 that are designed to simplify cable routing in an embedded computer system and aid in system operation.

Connector	Function	LEDs	Function
P6-n	PSON	1 - 4	SHB Present
P7-n	PWRBTN	4 - 8	Sys. Fan Present
P8-n	RESET	9 - 12	Segment 3 Power LEDs: 9=3.3V, 10=5V, 11=12V, 12=5V AUX
P9-n	PWRGD	15 - 18	Segment 1 Power LEDs: 15=3.3V, 16=5V, 17=12V, 18=5V AUX
P29-n	Clear CMOS	19 - 22	Segment 2 Power LEDs: 19=3.3V, 20=5V, 21=12V, 22=5V AUX
P45-n	HDD LED	23 - 26	Segment 4 Power LEDs: 23=3.3V, 24=5V, 25=12V, 26=5V AUX
P46-n	3.3V AUX Enable		
P41	FAN Alarm (system wide)		

