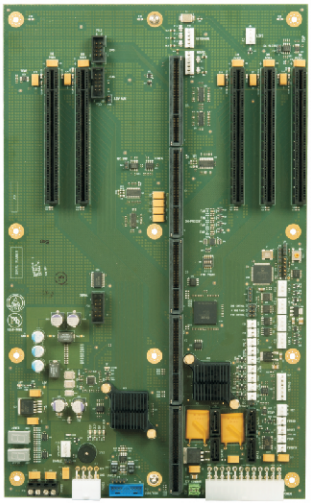
HDB8236

HDEC® Series SMALL FORM FACTOR "Shoebox" BACKPLANE



FEATURES

- Small form factor or "shoebox" backplane supports one HDEC® system host board
- Switchless backplane design lowers data latency and overall system cost
- Ideal for dual-processor Trenton HEP8225 HDEC Series system host boards
- Direct PCI Express GEN3 links to the SHB's processors from each plug-in option card slot maximizes data throughput speeds
- Supports industry standard PCI Express® 3.0, 2.0 and 1.1 option cards
- Five x16 PCI Express mechanical card slots
- PCIe GEN3 card slot electrical configuration: four x16, and one x8
- Four SATA/600 and two USB 3.0 system I/O connections
- Built-in system fan control maximizes system longevity
- Five-year factory warranty
- Made in U. S. A.

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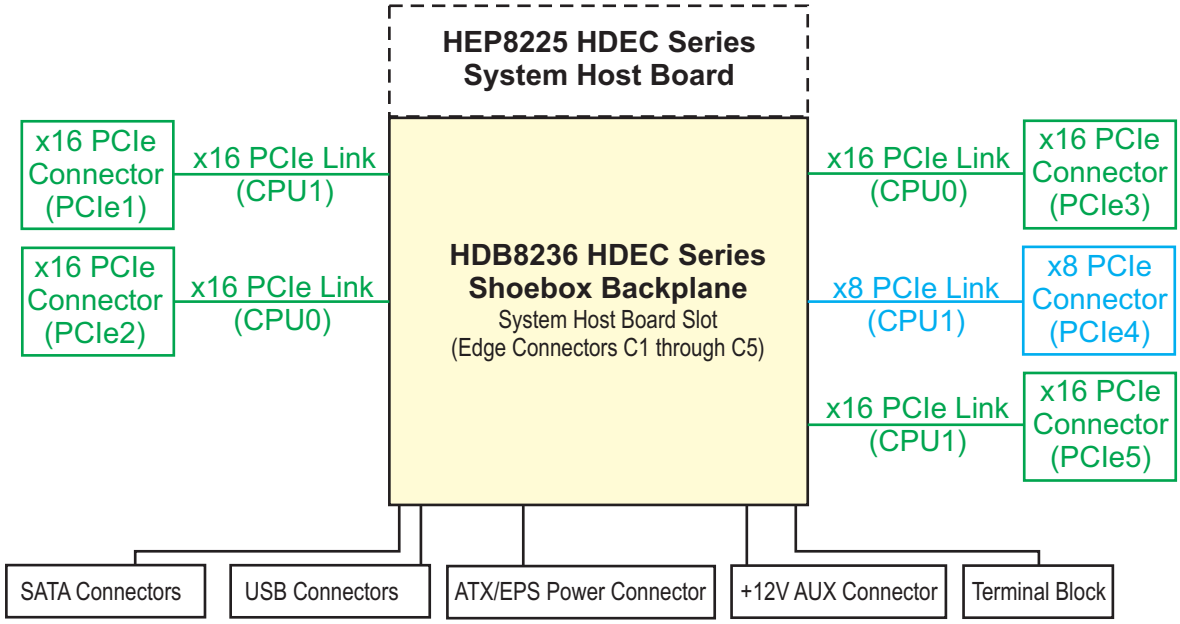
BLOCK DIAGRAM:



HDEC SERIES SMALL FORM FACTOR "Shoebox" BACKPLANE:

The HDB8236 small form factor backplane is ideal for integrating into 2-in-1 5U rackmount computers such as the THS5090 from Trenton Systems. The size of the HDB8236 backplane also lends itself well for small shoebox computer chassis that are embedded inside machines. Compatible with HDEC Series system host boards such as the Trenton Systems' HEP8225; the HDB8236 takes full advantage of the eighty (80) available PCI Express GEN3 links from the SHB. The backplane architecture enables a completely switchless design that virtually eliminates data latency from a system's PCIe option cards and the Haswell-EP host processors on the system host board. All option card slots utilize x16 mechanical connectors with card slots PCIe1, PCIe2, PCIe3 and PCIe5 driven with by the SHB's x16 PCIe 3.0 electrical links. The remaining card slot is driven with a x4 PCIe 3.0 electrical link. Automatic PCIe link negotiation enables support for a wide variety of PCI Express plug-in cards including GPUs.

APPLICATION EXAMPLES:

The innovative mechanical design of the HDB8236 enables this small form factor HDEC Series backplane to drop into wide variety of 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 the SHB slot on the backplane and the deployment of various system I/O connectors 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 option cards used in medical diagnostics, military/aerospace, video wall controllers and communication systems.

HDEC SERIES BACKPLANE MODEL: HDB8236

MODEL#	MODEL NAME	DESCRIPTION
8236-037	HDB8236-CRA	HDEC Series SHB compatible backplane with ATX/EPS and 12V AUX right-angle power connectors, and a 4-position terminal block

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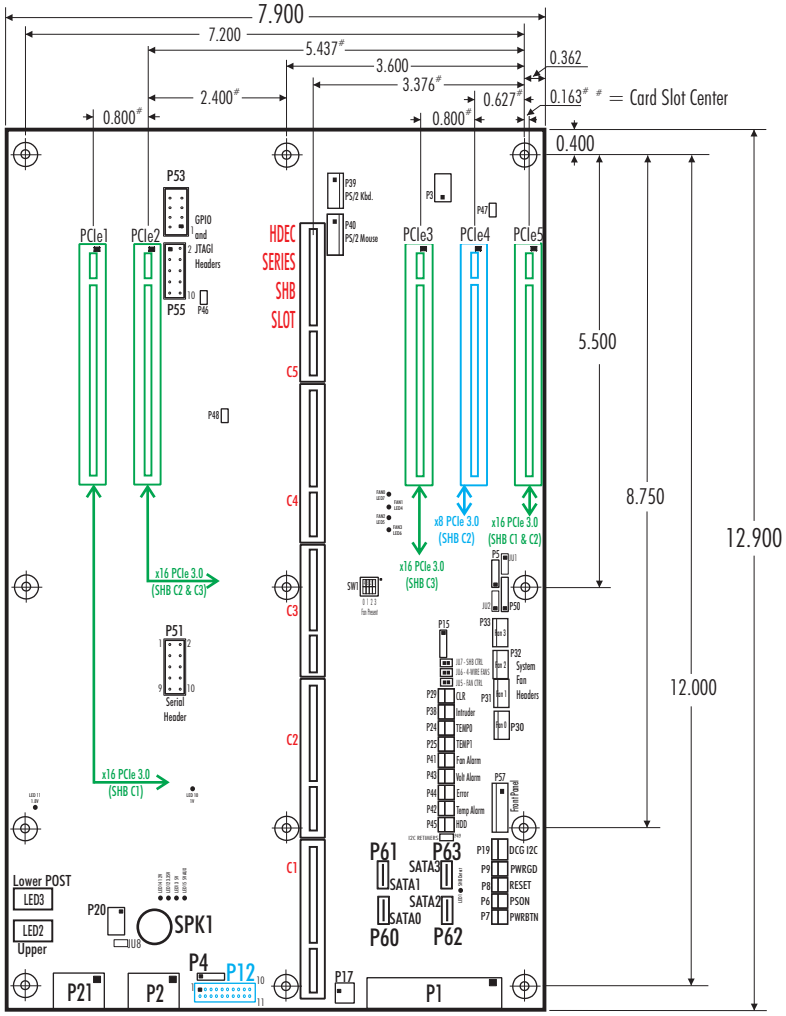
HDB8236 BACKPLANE LAYOUT & MOUNTING HOLE PATTERN DIMENSIONS:



SUGGESTED TRENTON HDEC SERIES SHB:

DUAL PROCESSOR SYSTEM HOST BOARD: 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 HDB8236 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 HDB8236 backplane is designed for UL60950 and CAN/CSA C22.2 No. 60950-00.

ENGINEERING NOTES:

1. The power connectors are shown in the layout drawing represents backplane model number 8236-037.
2. Mounting holes: 0.156" diameter
3. Nominal PCB thickness: 0.080"
4. All dimensions are inches.
5. The PCI Express 3.0 links on this HDEC Series backplane are driven directly from the HDEC Series system host board. PCIe 3.0 link re-timers are used to ensure single integrity between the SHB and each plug-in PCIe option card.
6. PCIe electrical interface key for the option card slots:
   Green = Slot driven with a x16 PCIe 3.0 link from the HEP8225 SHB
   Blue = Slot driven with a x8 PCIe 3.0 link from the HEP8225 SHB

SYSTEM I/O CONNECTIONS AVAILABLE ON THE HDB8236 HDEC SERIES BACKPLANE:

The HDB8236 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. Use the following backplane connectors to ensure the most efficient system I/O wiring possible for embedded computer systems.

HDB8236 Connector	Function	HDB8236 Connector	Function
P1	ATX/EPS power inputs from system supply	P30 - P33	System fan connectors (4)
P2, P22	+12V AUX power inputs from system supply	P39	PS/2 keyboard header
P3	LED dimmer interface	P40	PS/2 mouse header
P12	USB3.0 header for Port0/Port1front panel interfaces	P51	Serial interface header (RS232/422/485)
P20	System speaker interface	P60 - P63	SATA/600 interfaces for HDD/SDDs (4)

ADDITIONAL SYSTEM INTERFACE CONNECTIONS, JUMPERS and LEDS:

There are a number of additional connectors, jumpers and LEDs available on the HDB8236 that are designed to simplify cable routing in an embedded computer system and aid in system operation.

Connector	Function	Conn.	Function
P6	PSON	P45	HDD LED
P7	PWRBTN	P46	3.3V AUX Enable (all slots)
P8	RESET		
P9	PWRGD		
P24, P25	TEMP0, TEMP1		
P38	Intruder		
P41	FAN Alarm		
P42	TEMP Alarm		
P43	VOLT Alarm		

Jumper	Function
JU5	Fan Ctrl Enable
JU6	Four-wire FANs
JU7	SHB Fan Ctrl
JU8	Spk. Enable

LEDs	Function
1	SHB Present
2	Upper POST Codes

LEDs	Function
3	Lower POST Codes
4 - 7	Sys. Fan Present
10	1.0v Pwr. Reg. Gd.
11	1.8v Pwr. Reg. Gd.
12	+3.3V Supply
13	+5V Supply
14	+12V Supply
15	+5V AUX

Product Photo Note: The photo of the HDB8236 backplane is a provided for illustrative purposes only. Actual connector and mounting locations are illustrated in the backplane layout drawing.

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