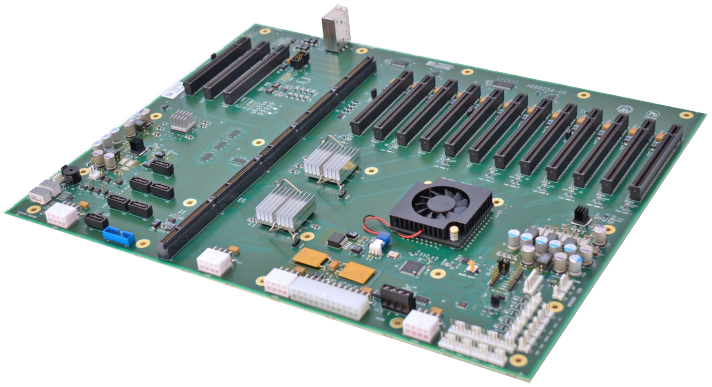
HDB8259

HDEC® Series LARGE FORMAT BACKPLANE



FEATURES

- Large form factor backplane supports one HDEC® system host board
- Provides excellent system expansion and configuration options
- Ideal for dual-processor Trenton HEP8225 HDEC Series system host boards
- PCI Express Gen3 links to the SHB's processors maximizes data throughput speeds
- PC Bus isolation on all PCIe slots for custom applications
- Supports industry standard PCI Express® 3.0, 2.0 and 1.1 option cards
- Fifteen x16 PCI Express mechanical card slots
- PCIe Gen3 card slot electrical configuration: 4 x16, and ten x8
- Six SATA/600 and two USB 3.0, four USB 2.0 system I/O connections
- Built-in system fan control maximizes system longevity
- Five-year factory warranty
- Made in the U.S.A.

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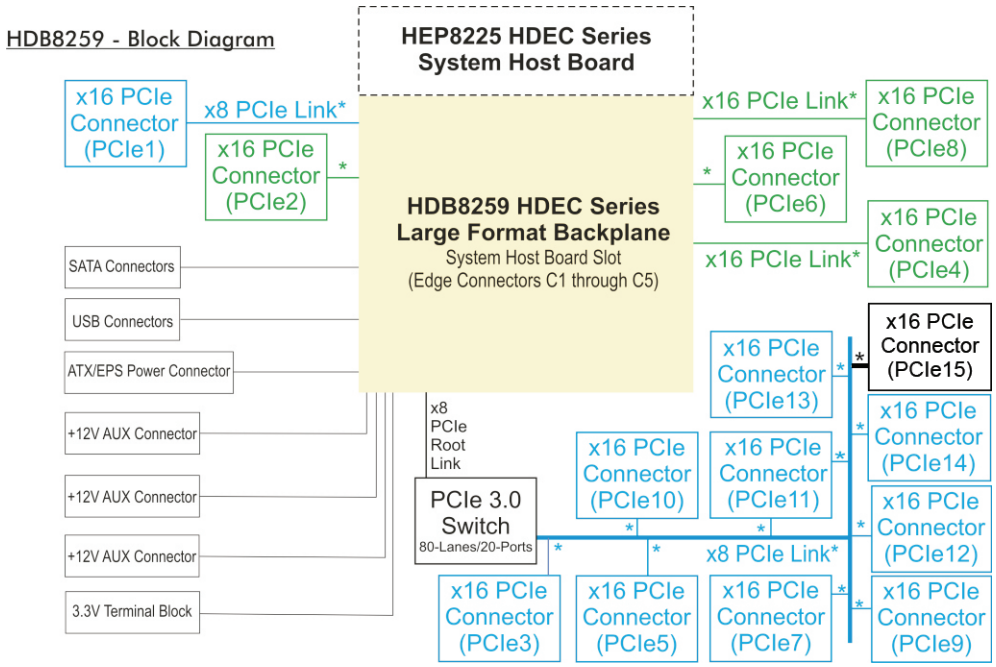
BLOCK DIAGRAM:



HDEC SERIES LARGE FORM FACTOR BACKPLANE:

The HDB8259 large form factor backplane is ideal for integrating large numbers of PCI Express option cards into a system powered by a HDEC Series SHB from Trenton, such as the HEP8225. The HDB8259 takes full advantage of the eighty (80) available PCI Express GEN3 links from the SHB. All option card slots utilize x16 mechanical connectors with card slots PCIe2, PCIe4, PCIe6 and PCIe8 directly driven at x16 speeds by the SHB's PCIe 3.0 electrical links. A single slot, PCIe1 is driven by a x8 electrical link from the SHB. The remaining card slots are driven with a x8 PCIe 3.0 electrical link from the SHB which is augmented by a 20 port PCIe 3.0 switch. Automatic PCIe link negotiation enables support for a wide varety of PCI Express plug-in cards including GPUs. I^2C Bus isolation allows easy deployment of custom code enabling low-level communication with option cards.

APPLICATION EXAMPLES:

The mechanical design of the HDB8259 is targeted toward 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 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: HDB8259

MODEL#	MODEL NAME	DESCRIPTION
8259-037	HDB8259-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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HDB8259 BACKPLANE LAYOUT & MOUNTING HOLE PATTERN DIMENSIONS:

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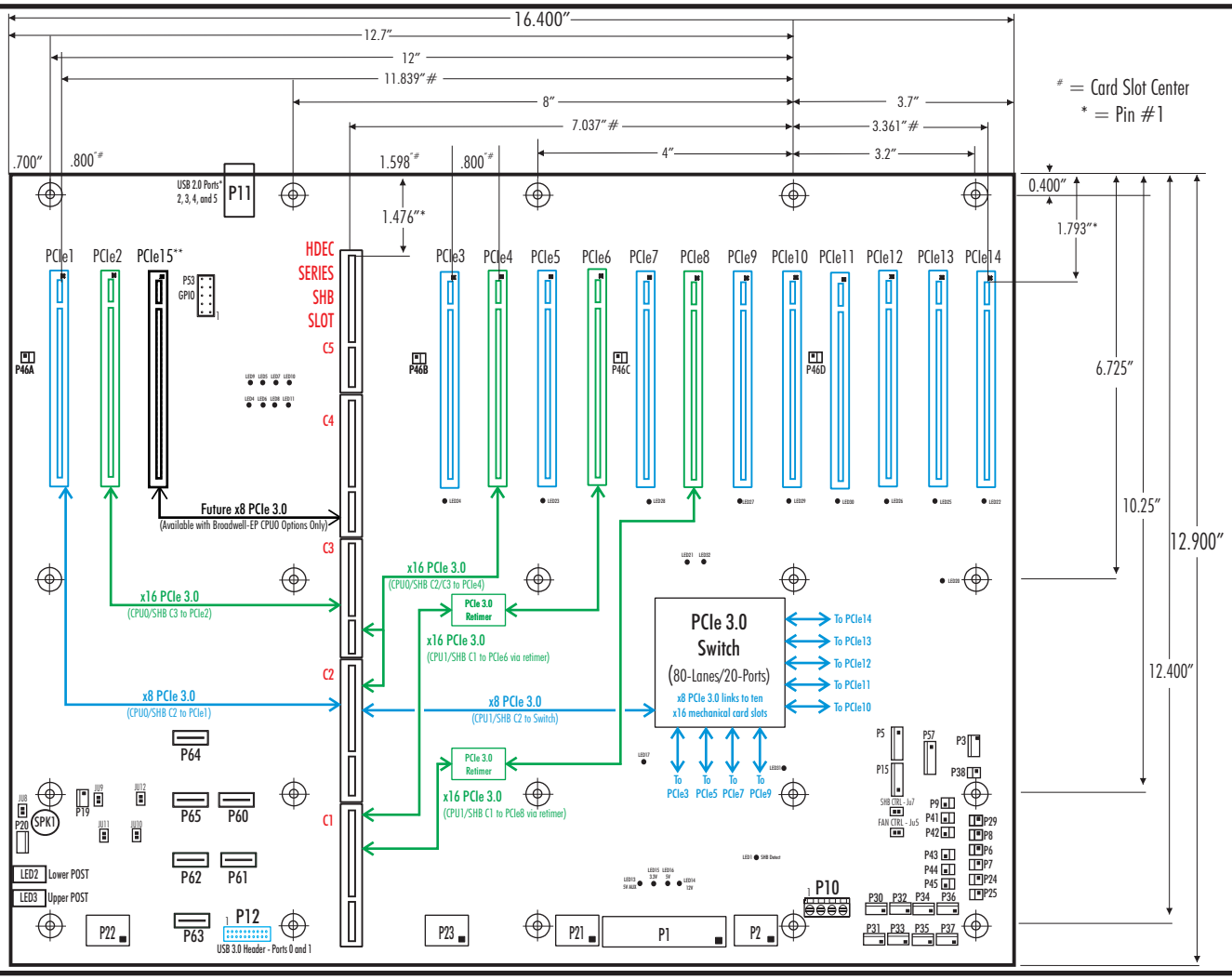

ENVIRONMENTAL SPECS.:#

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 HDB859 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 HDB8259 backplane is designed for UL60950 and CAN/CSA C22.2 No. 60950-00.

ADDITIONAL SYSTEM INTERFACE CONNECTIONS, JUMPERS and LEDS:

There are a number of additional connectors, jumpers and LEDs available on the HDB8259 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
P8	RESET		enable (all slots)
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

ENGINEERING NOTES:

1. The power connectors are shown in the layout drawing represents backplane model number 8259-037.
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

Product Photo Note: The photo of the HDB259 backplane is a provided for illustrative purposes only. Actual connector and mounting locations are illustrated in the backplane layout drawing.

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***Utilizing an HEP host board will keep slot PCIe15 from being functional.*

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