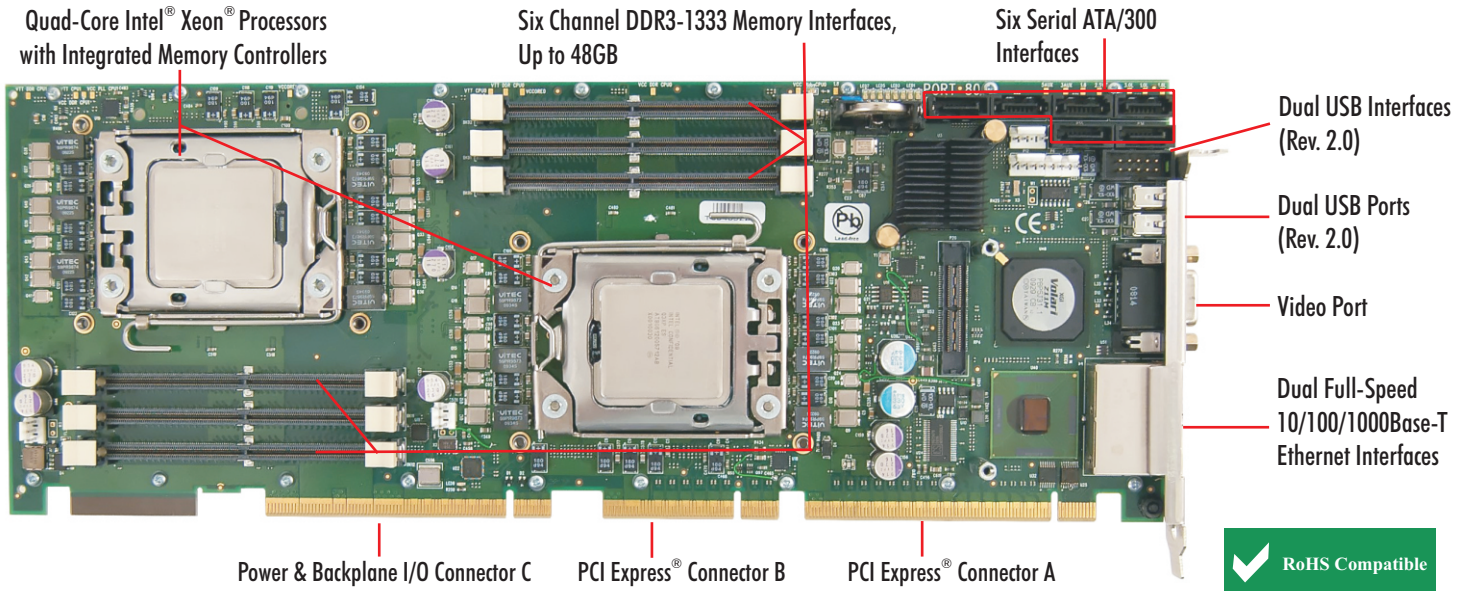
JXT6966

PRODUCT DATA SHEET

SYSTEM HOST BOARD WITH MULTI-CORE PROCESSORS



Raising system performance levels while lowering new technology deployment risks and power consumption are key features of Trenton's JXT6966 single board computer. Here's a brief list of the SBC highlights:

- System performance boost with advanced micro-architecture
- New CPU core and chipset designs reduce power consumption
- Deployment risks lowered with extended-life board design
- 5-year product warranty maximizes system ROI
- 5x memory performance increases delivered with direct to the processor DDR3 six-channel memory interfaces

PROCESSORS:

Quad-Core Intel® Xeon® C5500 Processors, 2.13GHz - 2.53GHz*
Processor Package: LGA1366

The DDR3 integrated memory controllers of the Intel® Xeon® EC5500 series processors provide a five-fold speed increase in system memory processing compared to previous generation processors. The Intel® QuickPath Interconnect (QPI) between

- Extended-life, embedded components provide longevity
- Improved CPU thermal design saves power
- Quad-core micro-architecture with Intel® Hyper-Threading doubles core processing capability (LC5528 & EC5549)
- Intel® Virtualization Technology (VT-x2 & VT-d2)
- Integral PCI Express Gen 1.1 and Gen 2.0 links

BIOS (FLASH):

JXT6966 board use Aptio® 4.x BIOS from American Megatrends, Inc. or AMI. The board's BIOS resides in the SHB's SPI Flash device to simplify field upgrades and BIOS customization.

PLATFORM CONTROLLER HUB (PCH):

The Intel® 3420 is a Platform Controller Hub or PCH that takes the place of the traditional multi-component chipset. The PCH design approach saves power while providing enhanced system host board I/O, PCI Express and Ethernet interface capabilities.

THREE ETHERNET INTERFACES - 10/100/1000BASE-T:

The JXT6966 SHB supports two Gigabit Ethernet ports on the board's I/O bracket. A third Gigabit Ethernet interface is routed

PCI EXPRESS® GEN 2.0 and GEN 1.1 INTERFACES:

Trenton's JXT6966 SHB supports PICMG® 1.3 server or graphics-class systems with either a x16 or two x8 PCI Express® links on a PICMG 1.3 backplane. An additional x4 PCIe link and eight PCIe reference clocks are also supplied on edge connectors A & B of the SHB. Trenton's optional IOB33 and PEX10 modules can be used on the board to provide additional x1 and x16 PCIe links to a backplane. The Trenton JXT6966 automatically configures all of its PCIe links to operate as either PCIe Gen 2.0 or PCIe Gen 1.1 interfaces based on the type of PCI Express endpoints such as option cards, PCIe switches and bridge chips.

PCI EXPRESS CONFIGURATION:

PCI Express - Edge Connectors A & B	- One x16 or two x8 links, plus one x4 link - Eight reference clocks
PCI Express - (IOB33/PCIe Expansion)	- One x1 link
PCI Express - (PEX10/PCIe Expansion)	- One x16 link

DDR3-1333 MEMORY INTERFACE:

The DDR3-1333 memory interface is a six-channel interface with three channels on each Intel® Xeon® EC5500 Series Processor. The SHBs use ECC registered, PC3-8500 or PC3-10600 DDR3 Mini-DIMMs. A maximum memory capacity of 48GB is supported when using 8GB DDR3 Mini-DIMMs and 24GB with 4GB Mini-DIMMs. The peak memory interface bandwidth per channel is 32GB/s when using the PC3-10600 Mini-DIMMs.

BOARD STIFFENER BARS:

The two stiffener bars located on the back of the JXT6966 maximize system integrity by ensuring proper SHB alignment within the card guides of the computer chassis. The stiffeners provide reliable SHB operation by protecting sensitive board components from mechanical damage and assist in the safe

VIDEO:

Trenton's JXT6966 SHB features a Graphics Processing Unit (GPU) driven with a x1 PCIe link from the PCH of the board. The GPU has 8MB of on-board video memory to support pixel resolutions up to 1920 x 1200 (WUXGA) with a 64K color depth.

SERIAL ATA/300 PORTS:

An integrated Serial ATA (SATA) controller in the Intel® 3420 provides six SATA ports with data transfer rates up to 300MB/s. Independent SATA drive operation and RAID drive array configurations are supported on the SHB. SATA drives reduce power consumption while simplifying system wiring.

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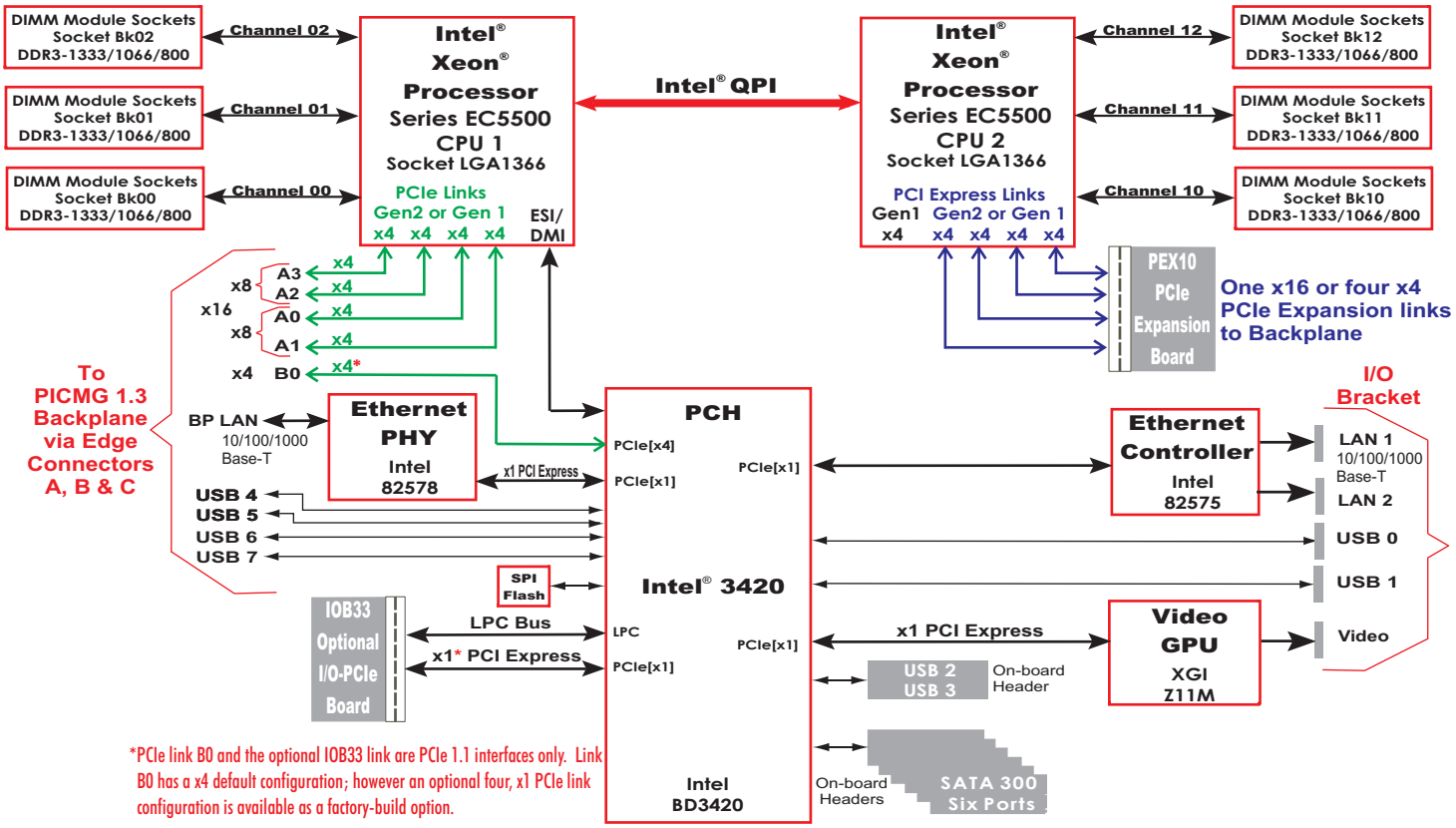

*PCIe link B0 and the optional IOB33 link are PCIe 1.1 interfaces only. Link B0 has a x4 default configuration; however an optional four, x1 PCIe link configuration is available as a factory-build option.

UNIVERSAL SERIAL BUS INTERFACES (USB 2.0):

There are eight USB 2.0 interfaces on the JXT6966 SHB. USB ports 0 and 1 are located on the I/O bracket, on-board headers contain ports 2 and 3, and USB ports 4, 5, 6 and 7 are routed to the SHB's edge connector C for use on backplanes that support the optional PICMG 1.3 USB interface capability.

OPTIONAL PEX10 PCIe Gen 2.0 LINK EXPANSION:

An optional PEX10 PCIe Gen 2.0 expansion board has a x16 PCIe edge connector that routes additional PCI Express links from the rear connector on the JXT6966 SHB down to a backplane. This enables expanded x4, x8 and x16 system interface capabilities beyond the PICMG 1.3 specification.

ADDITIONAL PRODUCT FEATURES:

I/O Features:

- Optional I/O and PCIe expansion board provides:
  - x1 PCIe link routing to backplane PCIe Expansion Slot
  - Enhanced bi-directional parallel interface
  - PS/2 mouse and keyboard interface (mini DIN connector)
  - Floppy drive interface and two high-speed serial ports
- The JXT6966 provides a programmable watchdog timer with programmable timeout periods of 100 msec, 1 second, 10 seconds or 1 minute via board component U13. When enabled the WDT generates a system reset. WDT control is supplied via the General Purpose IO pins from the Intel® 3420 Platform Controller Hub (PCH).

STANDARDS:

- PCI Express® Base Specifications 2.0 and 1.1
- SHB Express®System Host Board PCI Express Specification - PCI Industrial Computer Manufacturers Group (PICMG®) 1.3

APPLICATION CONSIDERATIONS:

Power Requirements:

Typical Values - Static Desktop (Idle) with 12GB of system memory

CPU	Intel® No.	+5V	+12V	+3.3V
2.53GHz	EC5549	1.07A	6.48A	4.44A
2.27GHz	EC5539[D]	0.90A	6.29A	4.48A
2.0GHz	EC5509	0.90A	5.96A	4.91A
2.13GHz	LC5528[4]	1.06A	4.87A	4.91A

Typical Values - 100% Stress State with 12GB of system memory

CPU	Intel® No.	+5V	+12V	+3.3V
2.53GHz	EC5549	1.09A	12.20A	4.48A
2.27GHz	EC5539[D]	0.92A	9.78A	4.48A
2.0GHz	EC5509	0.90A	10.39A	4.93A
2.13GHz	LC5528[4]	1.06A	10.57A	4.94A

D = Dual-core CPU, 4 = 4GB of system memory for LC5528

Temperature/Environment:

Operating Temperature: 0° to 50° C.
Air Flow Requirement: 350LFM continuous airflow
Storage Temperature: - 20° to 70° C.
Humidity: 5% to 90% non-condensing

Mechanical:

The standard active cooling solution used on the JXT6966 enables placement of option cards approximately 2.15" (54.61mm) away from the top component side of the SHB. Contact Trenton for a system engineering consultation if your application needs a lower profile cooling solution. The overall board dimensions are 13.330" (33.858cm) L x 4.976" (12.639cm) H.

ORDERING INFORMATION:

Model No.	CPU Speed	Intel® No.*
92-696612500000	2.53GHz	EC5549
92-696642500000	2.27GHz	EC5539[D,#]
92-696605300000	2.0GHz	EC5509[#]
92-696622400000	2.13GHz	LC5528

* = All CPU options are embedded CPUs, # = CPU without Hyper-Threading

AGENCY APPROVALS:

UL60950, CAN/CSA C22.2 No. 60950-00, EN55022:1998 Class B, EN61000-4-2:1995, EN61000-4-3:1997, EN61000-4-4:1995, EN61000-4-5:1995, EN61000-4-6:1996,EN61000-4-11:1994

The stated processing, memory and communication interface speeds and bandwidths are component maximums; actual system performance may vary.

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