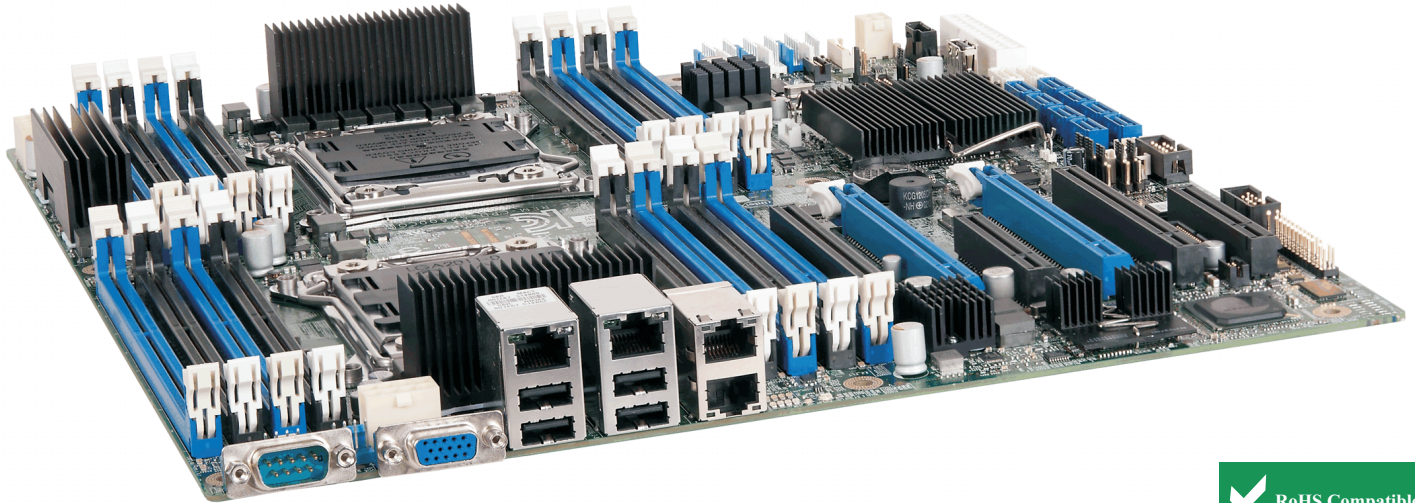


DUAL-PROCESSOR EXTENDED-LIFE INTEL® MOTHERBOARD



The BXM7504 is an extended-life motherboard from Intel that has been validated in various Trenton Systems' computing platforms to deliver superior processing performance in embedded motherboard applications using two, multi-core Intel® Xeon® E5-2600 series processors. The BXM7504 features:

- System performance boost via Sandy Bridge-EP processors
- Multiple x16 PCI Express 3.0 Option Card Slots
- Direct DDR3-to-CPU memory performance increases
- 12" x 13" form factor supports a variety of system form factors
- Expanded SAS and SATA device interfaces
- Validated for use in computers from Trenton Systems

PROCESSORS & SSI EEB FORM FACTOR:

Multi-Core Intel® Xeon® E5-2600 Processors, 1.8GHz - 3.3GHz* Processor Package: LGA2011

*Dual, Quad, Six & Eight-core processor options available

The BXM7504 packs the enhanced capabilities of two, eight or six-core CPUs into a 12" x 13" SSI EEB motherboard. Advanced motherboard functionality includes:

- Quad GbE ports for advanced communications
- Dual CPU processing capabilities based on the Sandy Bridge-EP micro-architecture
- Enhanced system flexibility with Intel® VT-x & VT-d
- Enables robust system designs with long-term availability, technical superiority and improved ROIs

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

The BXM7504 motherboard supports four Gigabit Ethernet ports on the board's I/O panel. The board's Ethernet controller chip is driven with a high-speed interface from the motherboard's integrated BMC to ensure fast and reliable network communications.

INTEL® RMM4 NIC MODULE SUPPORT:

A dedicated NIC module connector is supported on the BXM7504 to enable remote management in advanced enterprise-level communication networks via an optional Intel® RMM4 plug-in module.

PCI EXPRESS CARD SLOTS:

The PCI Express card slots on the BXM7504 motherboard support a wide variety of option cards for different system applications. For example, four of the motherboard's six option card slots feature x16 PCI Express 3.0 interface links to support high-end video and graphics cards common in machine vision, medical diagnostics and military surveillance applications. The remaining two card slots support x8 PCIe mechanical connectors and feature x8 and x4 electrical links. All six slots support PCIe 3.0, 2.0 or 1.1 cards with automatic link training via the specific interface type and x16, x8, x4 or x1 link width used on the card.

DDR3-1600 MEMORY INTERFACES:

There are sixteen DDR3 memory DIMM sockets on the BXM7504 motherboard capable of supporting up to 128GB of system memory when using standard 8GB DIMMs. Four, dual-channel DDR3-1600 memory interfaces connect directly to each Intel® Xeon® E5-2600 series processor. The BXM7504 motherboard uses ECC registered, PC3-1333 or PC3-1600 memory and supports a peak data transfer rate of 1600MT/s per channel when using the PC3-1600 DIMMs.

SAS/SATA & SATA/600 PORTS:

An integrated SAS/SATA controller in the Intel® C600-A PCH provides eight SAS/SATA ports with data transfer rates up to 300MB/s. The motherboard features two additional 600MB/s SATA-only ports. Independent SAS/SATA drive operation and RAID drive array implementations are supported.

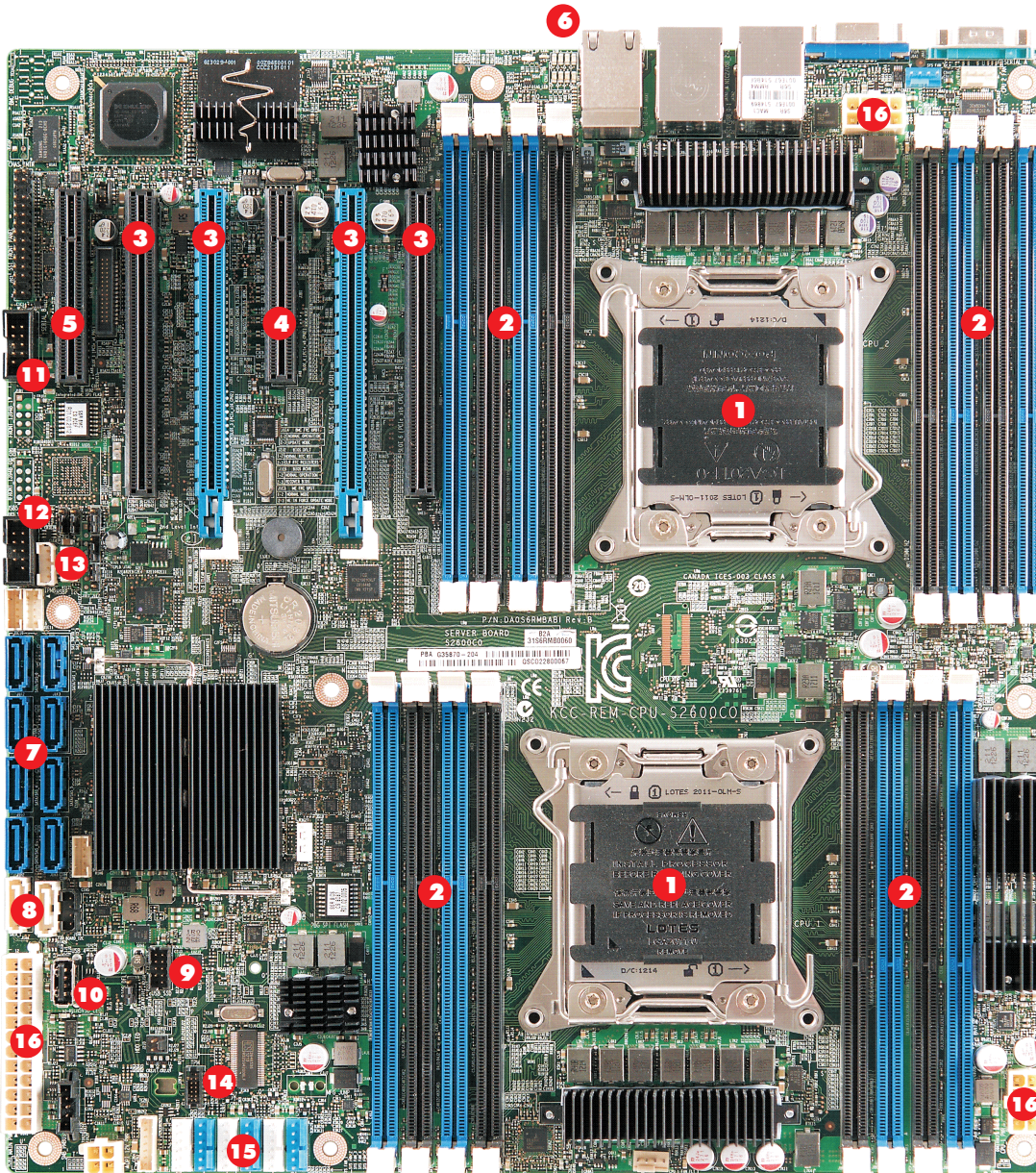
SERVER MANAGEMENT & SECURITY FEATURES:

The BXM7504 is compliant with IPMI 2.0 via the use of the motherboard's integrated Baseboard Management Controller or BMC. The motherboard supports both the Intel® Server Management Software and Intel® Remote Management Module 4 (Intel® RMM4) accessory. The Intel® Trusted Execution Technology (Intel® TXT) is also supported to enable trusted computing platforms via the motherboard's TPM header.

USB I/O, USB SSD, SERIAL & VIDEO PORTS:

There are four general purpose USB I/O ports located on the motherboard's I/O plate and an internal header for two additional USB I/O connections. The I/O plate also supports an HD-15 analog video port and one DB9 serial port. An internal serial port header is also available along with a Type-A internal USB header. A dedicated eUSB header for supporting 2mm low-profile solid state devices is also available on the BXM7504 motherboard.





- 1** Intel Xeon E5-2600 Processor Socket (2)
- 2** Standard DDR3-1600 DIMM Sockets (16)
- 3** x16/x16 PCI Express 3.0 Card Slots (4)
- 4** x8/x8 PCI Express 3.0 Card Slot (1)
- 5** x4/x8 PCI Express 2.0 Card Slot (1)
- 6** External I/O includes:
4 - GbE Ports
4 - USB 2.0 Ports
1 - DB9 Serial Port
1 - HD-15 Analog Video Port
- 7** SAS/SATA Ports - 300MB/s (6)
- 8** SATA/600 Ports (2)
- 9** eUSB Port (SSD)
- 10** Type A USB 2.0 Connector
- 11** Serial Port Header
- 12** USB Header (2 - Interfaces)
- 13** IPMB Header
- 14** TPM Header
- 15** System Fan Connectors (6)
- 16** Power Connectors (3)

BXM7504 APPLICATION CONSIDERATIONS:

Maximum Power Requirements:

To support the processor configurations possible on the BXM7504, the system power supply must be able to deliver the following current level to each voltage rail.

3.3V: 18.0A, 5V: 15.0A, 12V1: 28.0A, 12V2: 28.0A
12V3: 18.0A, 3.3V: 18.0A -12V: 0.5A, 5Vstby: 3.5A

Notes:

1. The maximum combined power for all outputs shall not exceed 550W
2. Peak combined power for all outputs shall not exceed 630W for 20 secs.
3. Max combined power of 12V1, 12V2 and 12V3 shall not exceed 530W
4. Max combined power of 3.3V and 5V shall not exceed 120W

Temperature/Environment:

Operating Temperature: 0° to 55° C.

Air Flow Requirement: 350LFM continuous airflow

Storage Temperature: -40° to 70° C.

Humidity: 5% to 90% non-condensing

COMPATIBLE SYSTEMS:

The motherboard uses several high-performance components that must have adequate airflow to operate at peak efficiency and to support trouble-free system operations in a variety of application environments.

Trenton Systems offers a number of chassis options that have been optimized for use with the BXM7504. Here is a short list of available systems designed for use with the BXM7504 embedded motherboard:

- TRC3001 - 3U 19" rackmount computer / 20" chassis depth
- TRC4009 - 4U 19" rackmount computer / 16.25" chassis depth
- TRC4008 - 4U 19" rackmount computer / 20" chassis depth
- TRC4005 - 4U 19" rackmount computer / 26.4" chassis depth

Contact Trenton Systems for more information and to discuss your unique system configuration requirements.

ORDERING INFORMATION:

Model No.	CPU Speed	Embedded Intel® No.
392750403400000	2.1GHz	E5-2658 ⁸
392750402200000	2.0GHz	E5-2620 ⁶
392750403100000	1.8GHz	E5-2648L ⁸

NOTES: All CPU options feature Intel® Hyper-Threading, 8 = Eight-core processor, 6 = Six-core processor, Other non-embedded Intel Xeon E5-2600 series processors available upon request

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

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