

**PRA-200 ATCA  
Processor Node Blade  
Product Brief**

Rev 0.5



## Summary:

The PRA-200 is a high-performance processor blade designed for single-slot operation in the ATCA form-factor and operating environment. This product is designed to catapult system performance to the next level while providing sufficient configuration options, such as CPU type and memory configuration, to allow deployment at several different tiers of service. This powerful and flexible ATCA blade features 2 LGA771 sockets and can be delivered with two dual or quad core processors with all cores operating in full SMP mode, plus it supports up to 32GB of dual channel DDR2 ECC memory on four full height RDIMMs with up to 1333 MT/s FSB. It also features PMC/XMC/AMC and hard disk expansion as well as SSD storage.

## Features:

|                                 |  |
|---------------------------------|--|
| Central Processing Units (CPUs) | <p>Multiple CPU configurations supported</p> <ul style="list-style-type: none"><li>• Two (2) LGA771 sockets, supporting multiple types of Xeon-class CPUs (see table below) all with 64 bit Extension and Intel VT</li></ul> <p>Multi-core CPUs supported in full SMP mode</p> <p>Front-side bus (FSB) runs at 1066 or 1333MT/s</p>  |
| Memory Controller Hub (MCH)     | <p>Intel 5100 Memory Controller Hub</p> <p>Up to 32GB of dual-channel DDR2 memory running at 667MHz</p> <ul style="list-style-type: none"><li>• Separate ECC per channel</li><li>• Four (4) RDIMM sockets (two per channel) using JEDEC-standard RDIMMs</li><li>• 25° sockets allow full-height RDIMMs to be used</li><li>• Can operate in single-channel mode for power-reduced configurations</li></ul> <p>Multiple PCI-E ports available for high-speed I/O direct to main memory</p> |
| I/O Controller Hub (ICH)        | <p>Intel ICH9R I/O Controller Hub</p> <p>Features numerous integrated peripherals</p> <ul style="list-style-type: none"><li>• USB (1.1 and 2.0)</li><li>• SATA (including RAID support)</li><li>• 10/100/1000 Ethernet MAC, routed to the front panel</li><li>• Provides conventional PCI interfaces for other peripherals</li></ul>   |
| Mass Storage                    | <p>SST NANDrive</p> <ul style="list-style-type: none"><li>• 1-8 GB capacity SSD (flash-based storage)</li></ul> <p>Optional 2.5" SATA HD carrier available</p>   |

|   |   |
|---|---|
| Ethernet Controllers                          | <p>Intel 82575 dual-port Gigabit Ethernet</p> <ul style="list-style-type: none"> <li>• Checksum offload supported</li> <li>• Interrupt coalescing supported</li> <li>• VLAN tag insertion, stripping, and packet filtering supported</li> </ul> <p>Intel 82598 dual-port 10 Gigabit Ethernet</p> <ul style="list-style-type: none"> <li>• Checksum offload supported</li> <li>• Interrupt coalescing supported</li> <li>• VLAN tag insertion, stripping, and packet filtering supported</li> </ul> <p>All ports routed to the backplane connectors</p> <ul style="list-style-type: none"> <li>• Two (2) ports as 1000BaseT (Base)</li> <li>• Two (2) ports at XAUI (ATCA 3.1 option 1 and Option 9, 10 GigE over Fabric)</li> </ul> <p>BIOS support for PXE boot and iSCSI boot available</p> |
| IPMI Controller                               | <p>All ATCA required management incorporated</p> <p>CPU access via KCS standard interface</p>   |
| Environmental                                 | <p>Operating temperature range: 0 to 55 °C</p> <p>Humidity: 0 to 95% (non-condensing)</p> <p>Worst-case power consumption</p> <ul style="list-style-type: none"> <li>• Baseboard only (no CPU, HDD, or expansion card): 75W</li> <li>• CPU: 2 CPUS, 40W max each, total 80W max or 1 CPU, 50W max</li> <li>• SATA HDD: 3W per drive</li> </ul>  |
| Expansion<br>(options are mutually exclusive) | <p>PMC slot</p> <ul style="list-style-type: none"> <li>• 64-bit, 133MHz PCI-X capable slot</li> </ul> <p>XMC slot</p> <ul style="list-style-type: none"> <li>• Supports PCIe up to x8 lanes</li> </ul> <p>AMC Slot</p> <ul style="list-style-type: none"> <li>• Supports PCIe up to x8 lanes</li> </ul> <p>HDD carrier</p> <ul style="list-style-type: none"> <li>• Supports 2.5" form factor SATA or SAS drive</li> <li>• Solid state drives (SSD) also supported</li> </ul>   |

## Intel Xeon® Core™ 2 Processor Possibilities:

| Processor Number | # of Cores | Core (GHz) | FSB (MHz) | TDP (Watt) | Process |
|------------------|------------|------------|-----------|------------|---------|
| 5128             | 2          | 1.86       | 1066      | 40         | 65nm    |
| 5138             | 2          | 2.13       | 1066      | 35         | 65nm    |
| 5148             | 2          | 2.33       | 1333      | 40         | 65nm    |
| L5215            | 2          | 1.6        | 1066      | 20         | 45nm    |
| L5238            | 2          | 2.66       | 1333      | 35         | 45nm    |
| L5318            | 4          | 1.6        | 1066      | 40         | 65nm    |
| L5408            | 4          | 2.13       | 1066      | 40         | 45nm    |
| L5410            | 4          | 2.33       | 1333      | 50         | 45nm    |

# Block Diagram:

