

SUPERMICR[®]

SuperBlade[®]

Double Density TwinBlade[™]

4-way Blade



OfficeBlade[™] and Storage Blade

DatacenterBlade[™]



Highest Performance per Watt

Up to 40 Processors (480 cores) per 7U Enclosure

94% Industry-Leading Efficiency Power Supply

- Six-Core Intel[®] Xeon[®] and Twelve-Core AMD Opteron[™]
- Up to 20/14/10 server nodes per 7U
- Six enclosures per 42U standard rack
- High Efficiency N+1 redundant power supplies (100~240VAC Option)
- Chassis management modules
- 1GbE/10GbE Layer 2/3 switch modules
- 40Gb/20Gb InfiniBand switch modules

Application-Optimized for:

Enterprises, Financial Services, Databases, Datacenters, Research Labs, High Performance Computing & Offices



TwinBlade w/ Two 2.5" Hot-plug Drive Bays per DP node



Intel DP Blade w/ Six 2.5" Hot-plug Drive Bays



Intel DP Blade w/ PCI-E 2.0 x16 Expansion Slot



4-way AMD Processor Blade



Layer 3 1/10GbE switch



40Gb InfiniBand switch

**Chassis Management Module
Web-based GUI**



CMM IPMI View

March, 2010

NDA Required

Confidential until CPU Release Date from Respective Manufacturers

MKT-0007-1109-1.0

Why SuperBlade®?

Best Density

Up to 40 processors (480 cores) per 7U enclosure
Supports current and next generation processors

Highest Memory Expansion Capability in the Industry

Up to 2.56TB memory per 7U enclosure

Fastest and Most Cost-Effective Networking Solution

20Gbps 4x DDR InfiniBand switch
40Gbps 4x QDR InfiniBand switch
1/10GbE switch - layer 2/3 switch with 3 10Gb uplink ports
1GbE switch - layer 2 switch with 10 external uplink ports
1GbE and 10GbE pass-through modules
Full 10GbE switch coming soon
FCoE module coming soon

High Efficiency Power for Earth-Friendly Operations

Up to 94% peak efficiency for 2500W power supply modules
N+1 redundant high efficiency power supplies in - 1620W, 2000W or 2500W options

Outstanding Storage Flexibility

Hot-plug 6Gb/s SAS2 or 3Gb/s SATA2
Two 3.5" SATA hard drive support
Up to six 2.5" SAS(2)/SATA hard drive support
RAID 0, 1, 5, 10, 50 options (for SBI-7125W-S6)

Peace of Mind via Remote Management

Standard with a chassis management module (CMM) for IPMI 2.0 remote server management, Virtual media over LAN and KVM over IP capabilities

Lower TCO

Modular design reduces deployment costs
High computational density reduces facility costs
High efficiency power supply reduces electrical costs
Cable reduction reduces cable count and can save thousands of dollars
Remote management reduces maintenance cost

The New TwinBlade!



SuperBlade® Enclosures and Cabinet



* SBE-710E Shown



* SBE-714D Shown

| Part ID | SBE-710E/Q Series |
|-------------------------|---|
| Server Blade | Up to 10 hot-plug server blades |
| Module Support | Supports both Intel and AMD based blades |
| LED | Power LED, Fault LED |
| InfiniBand Switch | Hot-plug 4x DDR IB switch (710E) or up to two hot-plug 4x QDR IB switches (710Q) |
| Gigabit Ethernet Switch | Up to two hot-plug Gigabit Ethernet switches or pass-through modules |
| Management Module | Up to two hot-plug management modules providing remote KVM and IPMI 2.0 functionalities |
| Power Supply | Hot-swap 1620W/2000W power supplies, N+1 redundant |
| Cooling Design | Front to back |
| Dimensions (HxWxD) | 12.2" x 17.6" x 29" |

| Part ID | SBE-714D/E Series |
|-------------------------|--|
| Server Blade | Up to 14 hot-plug server blades |
| Module Support | Supports Intel based blades |
| LED | Power LED, Fault LED |
| InfiniBand Switch | Hot-plug 4x DDR IB switch (714E only) |
| Gigabit Ethernet Switch | One (714D) or up to two (714E) hot-plug Gigabit Ethernet switches or pass-through modules |
| Management Module | One (714D) or up to two (714E) hot-plug management modules providing remote KVM and IPMI 2.0 functionalities |
| Power Supply | Hot-swap 1620W power supplies, N+1 redundant |
| Cooling Design | Front to back |
| Dimensions (HxWxD) | 12.2" x 17.6" x 29" |

NEW! TwinBlade Enclosure



| Part ID | SBE-720E Series |
|-------------------------|---|
| Server Blade | Up to 10 hot-plug server blades and TwinBlade |
| Module Support | Supports both Intel and AMD based blades |
| LED | Power LED, Fault LED |
| InfiniBand Switch | Up to two hot-plug 4x QDR IB switches |
| Gigabit Ethernet Switch | Up to two hot-plug layer 3 Gigabit Ethernet switches |
| Management Module | One hot-plug management modules providing remote KVM and IPMI 2.0 functionalities |
| Power Supply | Hot-swap 2500W power supplies, N+1 redundant |
| Cooling Design | Front to back |
| Dimensions (HxWxD) | 12.2" x 17.6" x 29" |

Personal Supercomputing Mini Rack Cabinet - CSE-RACK14U



Mobility, Protection and Security - Ideal for Office Application/Environment or Personal Supercomputing

Key Features

- Mobile 14U Rack Space
- Ideal for Office Environments - The same height as standard office furniture (30.64"H)
- Upgradeable - Rear frame mounting
- Mobile - casters for easy mobility

Specifications

- 14U height;
- 21.65" W x 34.65" D x 30.64" H
- Supports standard 19" rackmount servers with standard mounting holes
- Front door lock, casters with brakes
- Stability support
- Optional air filter

The innovative SuperBlade® features enhanced system computing density leveraged from years of rackmount server design experience. Applying Supermicro's application-optimized engineering philosophy, each SuperBlade® module delivers true server functionality including up to two Six-Core Intel® Xeon® processors, optional InfiniBand mezzanine HCA, optional PCI-Express expansion card, and support for up to 6 SATA or SAS2 hard drives. For more computational-intensive applications, the SuperBlade® also offers 4-way six-core (upcoming twelve-core) AMD® Optreron™ blades.

Supermicro also offers low-noise blade solutions that are optimized for offices and SMB. The OfficeBlade™ is ideal for SMB as well as personal supercomputing applications. With acoustically optimized thermal and cooling technologies it achieves < 50dB with 10 DP server blades and features 100-240VAC, ultra high-efficiency (94%), N+1 redundant power supplies.

**NEW! Westmere
TwinBlade 2 DP Nodes
in 1 Blade**

**NEW! AMD G34
TwinBlade 2 DP Nodes
in 1 Blade**

**NEW! PCI-E 2.0 x16
Expansion Slot per
DatacenterBlade™ node**

**Tylersburg/Westmere
Storage Blade w/ 6
SAS2.0 HDD Support
and QDR InfiniBand**

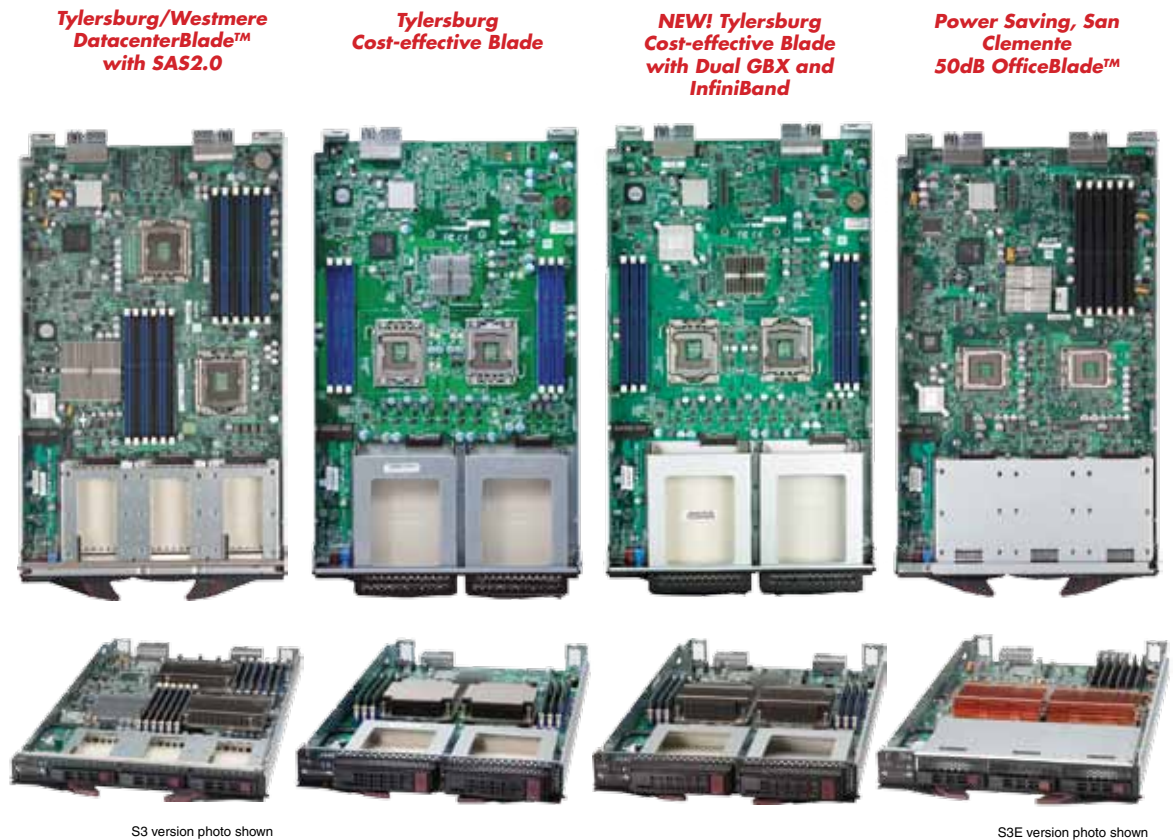


| Model | SBI-7226T-T2 (two nodes) | SBA-7222G-T2 (two nodes) | SBI-7426T-SH | SBI-7126T-S6 |
|-----------------------------|--|--|--|--|
| Processors | Two Six/Quad/Dual-Core Xeon 5600/5500 Series per node | Two AMD Twelve/Eight-Core Optreron™ 6100 Series per node | Two Six/Quad/Dual-Core Xeon 5600/5500 Series | Two Six/Quad/Dual-Core Xeon 5600/5500 Series |
| CPUs per 42U Rack | 240 | 240 | 168 | 120 |
| Chipset | Intel 5500 with QPI | AMD SR5650/SP5100 | Intel 5500 with QPI | Intel 5500 with QPI |
| Memory Support | RDIMM or UDIMM DDR3 1333/1066/800 in 8 sockets per node | RDIMM or UDIMM DDR3 1333/1066 in 8 sockets per node | RDIMM or UDIMM DDR3 1333/1066/800 in 12 sockets ⁺ | RDIMM or UDIMM DDR3 1333/1066/800 in 12 sockets |
| Max Memory | 128GB(RDIMM)/32GB(UDIMM) per node | 128GB(RDIMM)/32GB(UDIMM) per node | 96GB(RDIMM) ⁺ | 192GB(RDIMM)/48GB(UDIMM) |
| Expansion & Hard Disk Drive | Two hot-plug 2.5" SATA hard disk drives per node | Two hot-plug 2.5" SATA hard disk drives per node | One PCI-E 2.0 x16 (FH/HL) One hot-plug 2.5" SAS2/SATA | Six hot-plug 2.5" SAS2/SATA hard disk drives |
| Max Storage | 1TB SATA per node | 1TB SATA per node | 600GB SAS2 / 500GB SATA | 3.6TB SAS2 / 3TB SATA |
| Storage RAID | Intel ICH10R SATA RAID 0, 1 | AMD SP5100 SATA RAID 0, 1 | Intel ICH10R SATA RAID 0, 1 | LSI SAS 2008 RAID 0, 1, 10 Optional RAID 5 |
| InfiniBand/10GbE Option | 4X QDR (40Gb) InfiniBand or 10GbE mezzanine HCA per node | 4X QDR (40Gb) InfiniBand or 10GbE mezzanine HCA per node | 4X DDR (20Gb) InfiniBand or 10GbE mezzanine HCA | 4X QDR/DDR (40Gb/20Gb) InfiniBand or 10GbE mezzanine HCA |
| Ethernet Interface | Intel 82576 dual-port Gigabit Ethernet controller per node | Intel 82576 dual-port Gigabit Ethernet controller per node | Intel 82576 dual-port Gigabit Ethernet controller | Intel 82576 dual-port Gigabit Ethernet controller |
| Management | IPMI 2.0, KVM over IP, Virtual Media over LAN | IPMI 2.0, KVM over IP, Virtual Media over LAN | IPMI 2.0, KVM over IP, Virtual Media over LAN | IPMI 2.0, KVM over IP, Virtual Media over LAN |
| Graphics | Matrox G200eW | Matrox G200eW | Matrox G200eW | Matrox G200eW |
| LED Indicators | Power LED, UID/KVM LED, Networking LED, Fault LED per node | Power LED, UID/KVM LED, Networking LED, Fault LED per node | Power LED, UID/KVM LED, Networking LED, Fault LED | Power LED, UID/KVM LED, Networking LED, Fault LED |
| Operating Temp. | 10-35° C non-condensing | 10-35° C non-condensing | 10-35° C non-condensing | 10-35° C non-condensing |
| Dimensions | 11.32" x 1.67" x 20.5" | 11.32" x 1.67" x 20.5" | 11.32" x 1.19" x 18.9" | 11.32" x 1.67" x 18.9" |

SuperBlade® Servers

Space Optimization

When housed within a 19" EIA-310D industry-standard 42U rack, SuperBlade® servers reduce server footprint in the datacenter. Power, cooling and networking devices are removed from each individual server and positioned to the rear of the chassis thereby reducing the required amount of space while increasing flexibility to meet changing business demands. Up to fourteen blade servers can be installed in a 7U chassis. Compared to the rack space required by fourteen individual 1U servers, the SuperBlade® provides over 50% space savings.



S3 version photo shown

S3E version photo shown

| Model | SBI-7426T-S3/T3 | SBI-7126T-T1L | SBI-7126T-T1E | SBI-7125C-S3/S3E/T3 |
|-------------------------|---|---|--|--|
| Processors | Two Six/Quad/Dual-Core Xeon 5600/5500 Series | Two Six/Quad/Dual-Core Xeon 5600/5500 Series | Two Six/Quad/Dual-Core Xeon 5600/5500 Series | Two Quad/Dual-Core Xeon 5400/ 5300/5200/5100 Series |
| CPUs per 42U Rack | 168 | 120 | 120 | 120 |
| Chipset | Intel 5500 with QPI | Intel 5500 with QPI | Intel 5500 with QPI | Intel 5100 |
| Memory Support | RDIMM DDR3 1333/1066/800 in 12 sockets ⁺ | RDIMM or UDIMM DDR3 1333/1066/800 in 6 sockets | RDIMM or UDIMM DDR3 1333/1066/800 in 6 sockets | ECC Registered DDR2 667/533 in 6 sockets |
| Max Memory | 96GB (RDIMM) ⁺ | 96GB(RDIMM)/24GB(UDIMM) | 96GB(RDIMM)/24GB(UDIMM) | 48GB |
| Hard Disk Drive | Three hot-plug 2.5" SAS2/ SATA** hard disk drives | Two hot-plug 3.5" SATA hard disk drives | Two hot-plug 3.5" SATA hard disk drives | Three hot-plug 2.5" SAS/SATA** hard disk drives |
| Max Storage | 1.8TB SAS2* / 1.5TB SATA | 4TB SATA | 4TB SATA | 1.8TB SAS* / 1.5TB SATA |
| Storage RAID | LSI SAS 2008* RAID 0, 1 Optional RAID 5* | Intel ICH10R SATA RAID 0, 1 | Intel ICH10R SATA RAID 0, 1 | LSI SAS 1068E* RAID 0, 1 Optional RAID 5* |
| InfiniBand/10GbE Option | 4X DDR (20Gb) InfiniBand or 10GbE mezzanine HCA | N/A | 4X QDR/DDR (40Gb/20Gb) InfiniBand or 10GbE mezzanine HCA | 4X DDR (20Gb) InfiniBand or 10GbE mezzanine HCA (S3E version only) |
| Ethernet Interface | Intel 82576 dual-port Gigabit Ethernet controller | Intel 82576 dual-port Gigabit Ethernet controller | Intel 82576 dual-port Gigabit Ethernet controller | Intel 82575EB dual-port Gigabit Ethernet controller |
| Management | IPMI 2.0, KVM over IP, Virtual Media over LAN | IPMI 2.0, KVM over IP, Virtual Media over LAN | IPMI 2.0, KVM over IP, Virtual Media over LAN | IPMI 2.0, KVM over IP, Virtual Media over LAN |
| Graphics | Matrox G200eW | Matrox G200eW | Matrox G200eW | ATI ES1000 with 32MB SDRAM |
| LED Indicators | Power LED, UID/KVM LED, Networking LED, Fault LED | Power LED, UID/KVM LED, Networking LED, Fault LED | Power LED, UID/KVM LED, Networking LED, Fault LED | Power LED, UID/KVM LED, Networking LED, Fault LED |
| Operating Temp. | 10-35° C non-condensing | 10-35° C non-condensing | 10-35° C non-condensing | 10-35° C non-condensing |
| Dimensions | 11.32" x 1.19" x 18.9" | 11.32" x 1.67" x 18.9" | 11.32" x 1.67" x 18.9" | 11.32" x 1.67" x 18.9" |

* SAS and optional RAID 5 function for S3 and S3E version only
 ** SATA HDD only for T3 version
 + VLP (very low-profile) memory modules

Cable Reduction

The SuperBlade® server chassis greatly simplifies the cabling process by aggregating the cabling of ten/fourteen/twenty servers. Up to 93% of the network, power, and KVM cabling required for ten/fourteen/twenty 1U servers is eliminated by moving to blade servers in a single chassis. These cabling reductions continue across networking, SAN connectivity, and management controllers. Reducing the number of cables speeds up the deployment of servers and helps reduce troubleshooting issues by presenting fewer physical connections to the servers.

**Power Saving, San
Clemente
DatacenterBlade™**

**Storage Blade
6 Hard Drives**

**DP 6-core Opreton
(Istanbul) Blade**

**4-way Opreton Blade
featuring PCI-E 2.0
and QDR InfiniBand**



S3E version photo shown

| SBI-7425C-S3/S3E/T3 | SBI-7125W-S6 | SBI-7125B-T1 | SBA-7121M-T1 | SBA-7141A-T |
|--|--|--|---|--|
| Two Quad/Dual-Core Xeon 5400/5300/5200/5100 Series | Two Quad/Dual-Core Xeon 5400/5300/5200/5100 Series | Two Quad/Dual-Core Xeon 5400/5300/5200/5100 Series | Two AMD Six/Quad-Core Opreton™ 2000 Series | Four AMD Six/Quad-Core Opreton™ 8000 Series |
| 168 | 120 | 120 | 120 | 240 |
| Intel 5100 | Intel 5400 (1600MHz FSB) | Intel 5000P | NVIDIA MCP55 Pro | AMD SR5670/SP5100 |
| ECC Registered DDR2 667/533 in 6 sockets ⁺ | Fully Buffered DIMM DDR2 800/667 in 8 DIMM sockets | Fully Buffered DIMM DDR2 667/533 in 8 DIMM sockets | ECC Registered DDR2 800/667 in 8 DIMM sockets | ECC Registered DDR2 800/667 in 16 DIMM sockets |
| 24GB ⁺ | 64GB | 32GB | 64GB | 128GB |
| Three hot-plug 2.5" SAS/SATA** hard disk drives | Six hot-plug 2.5" SAS/SATA hard disk drives | Two hot-plug 3.5" SATA hard disk drives | Two hot-plug 3.5" SATA hard disk drives | One internal 2.5" SATA hard disk drive |
| 1.8TB SAS* / 1.5TB SATA | 3.6TB SAS / 3TB SATA | 4TB | 4TB | 500GB |
| LSI SAS 1068E* RAID 0, 1 Optional RAID 5* | LSI SAS 1078 RAID 0, 1, 5, 6, 10, 50 | Intel ESB2 SATA RAID 0, 1 | NVIDIA MCP55-Pro SATA RAID 0, 1 | N/A |
| 4X DDR (20Gb) InfiniBand or 10GbE mezzanine HCA (S3E version only) | 4X QDR/DDR (40Gb/20Gb) InfiniBand or 10GbE mezzanine HCA | 4X DDR (20Gb) InfiniBand or 10GbE mezzanine HCA | 4X DDR (20Gb) InfiniBand or 10GbE mezzanine HCA | 4X QDR/DDR (40Gb/20Gb) InfiniBand or 10GbE mezzanine HCA |
| Intel 82575EB dual-port Gigabit Ethernet controller | Intel (ESB2) 82563EB dual-port Gigabit Ethernet controller | Intel (ESB2) 82563EB dual-port Gigabit Ethernet controller | Intel 82571EB dual-port Gigabit Ethernet controller | Intel 82576 dual-port Gigabit Ethernet controller |
| IPMI 2.0, KVM over IP, Virtual Media over LAN | IPMI 2.0, KVM over IP, Virtual Media over LAN | IPMI 2.0, KVM over IP, Virtual Media over LAN | IPMI 2.0, KVM over IP, Virtual Media over LAN | IPMI 2.0, KVM over IP, Virtual Media over LAN |
| ATI ES1000 with 32MB SDRAM | ATI ES1000 with 16MB SDRAM | ATI ES1000 with 16MB SDRAM | ATI ES1000 with 16MB SDRAM | Matrox G200eW |
| Power LED, UID/KVM LED, Networking LED, Fault LED | Power LED, UID/KVM LED, Networking LED, Fault LED | Power LED, UID/KVM LED, Networking LED, Fault LED | Power LED, UID/KVM LED, Networking LED, Fault LED | Power LED, UID/KVM LED, Networking LED, Fault LED |
| 10-35° C non-condensing | 10-35° C non-condensing | 10-35° C non-condensing | 10-35° C non-condensing | 10-35° C non-condensing |
| 11.32" x 1.19" x 18.9" | 11.32" x 1.67" x 18.9" | 11.32" x 1.67" x 18.9" | 11.32" x 1.67" x 18.9" | 11.32" x 1.67" x 18.9" |

SuperBlade® Networking

SuperBlade® networking options include four different modules for Ethernet connectivity. In addition Supermicro offers a powerful InfiniBand switch for connecting Blades to 4X QDR/DDR (40Gb/20Gb) InfiniBand networks. All SuperBlade® networking options are hot-pluggable. The Ethernet modules can also be configured for redundant or dual load-sharing connections (or both). The 1/10 GbE switch and the 10GbE pass-through modules offer even higher bandwidth connectivity for the most demanding applications.

1Gb Ethernet Switch



1Gb Ethernet Pass-Through



1Gb/10Gb Ethernet Switch



10Gb Ethernet Pass-Through



| Part ID | SBM-GEM-001 | SBM-GEM-002 | SBM-GEM-X2C | SBM-XEM-002 |
|-----------------------|--|--|--|---|
| Internal Ports | Fourteen 1-Gbps downlink ports for LAN interfaces of the server blades | Fourteen 1-Gbps downlink ports for LAN interfaces of server blades | Fourteen 1-Gbps downlink ports for LAN interfaces of server blades | Fourteen 10-Gbps downlink XAUI ports |
| External Uplink Ports | Ten 1-Gbps uplink RJ-45 ports | Fourteen 1-Gbps uplink RJ-45 ports (speed fixed at 1-Gbps - no auto negotiation) | Three 10-Gbps uplink ports , stackable (Two CX4 & One SFP+) Two 1-Gbps RJ-45 uplink ports | Fourteen 10-Gbps uplink SFP+ ports (speed fixed at 10-Gbps - no auto negotiation) |
| Type | Layer-2 Ethernet switch | Ethernet pass-through module | Layer-2/3 Ethernet switch | Ethernet pass-through module |
| Bandwidth | Up to 24 Gbps non-blocking | | Up to 46 Gbps non-blocking | |
| Trunking | Link aggregation support - static (802.3ad) | | Link aggregation support - full (802.3ad) | |
| Jumbo Frame Support | Up to 9k bytes | | Up to 9k bytes | |
| Remote Management | Browser-based management | | Browser-based management/CLI | |
| Layer 2 Capabilities | STP, RSTP, 802.1x | | STP, RSTP, MSTP, IGMP snooping, 802.1x | |
| Layer 3 Capabilities | | | BGP, DVMRP, IGMP, IPv6, OSPF, PIM, RIP | |
| OS | Firmware upgradeable | | Firmware upgradeable | |

20Gb InfiniBand Switch



20Gb InfiniBand Pass-Through



40Gb InfiniBand Switch



| Part ID | SBM-IBS-001 | SBM-IBP-D14 | SBM-IBS-Q3618/Q3616(M) |
|------------------|---|--|--|
| Internal Ports | 14 internal ports: 4x DDR | 14 internal 4x DDR Ports (20Gbps) | 18/20 4x QDR downlink ports |
| External Uplinks | 10 external ports: 4x DDR - copper | 14 external 4x DDR copper ports (20Gbps - CX-4 Connectors) | 18/16 4x QDR QSFP uplink ports |
| Type | 4x DDR InfiniBand switch | 4x DDR InfiniBand pass-through module | 4x QDR InfiniBand switch |
| Bandwidth | 4X DDR (20Gbps) non-blocking architecture 960Gbps total switch bandwidth (24-port) | | 4X QDR (40Gbps) non-blocking architecture 2.88Tbps total switch bandwidth (36-port) |
| Management | In-band InfiniBand IBML | | In-band InfiniBand IBML *M" version supports BMB-CMM-002 Mini CMM |

InfiniBand Mezzanine HCA



| Part ID | AOC-IBH-XQD | AOC-IBH-XQS | AOC-IBH-XDD | AOC-IBH-XDS | AOC-IBH-002 |
|---------|----------------------------------|------------------------------------|------------------------------|--------------------------------|--------------------------------|
| Chipset | Mellanox ConnectX IB QDR | Mellanox ConnectX IB QDR | Mellanox ConnectX IB DDR | Mellanox ConnectX IB DDR | Mellanox InfiniHost III Lx DDR |
| Ports | Dual port 4x QDR/DDR IB or 10GbE | Single port 4x QDR/DDR IB or 10GbE | Dual port 4x DDR IB or 10GbE | Single port 4x DDR IB or 10GbE | Single port 4x DDR IB |

SuperBlade® Management

Key Features

- Remotely manage and monitor server blades, power supplies, cooling fans, and networking switches
- IPMI 2.0 compliant, with KVM over LAN / KVM over IP
- Serial over LAN (SOL)
- Virtual Media Over LAN (Virtual USB Floppy/CD and Drive Redirection)
- LAN Alert-SNMP Trap
- Event Log
- OS Independent
- Hardware Health Monitor
- Remote Power Control
- Management Tools - IPMIView, CLI (Command Line Interface)
- Supports RMCP & RMCP + Protocols

Specifications

- VGA port, 2x USB ports
- Remote Management Processor and sub-system
- 1x LAN port
- Video ADC, Video Compress FPGA
- IPMI Management
- Hot-Swap Capable
- GBX Backplane Connector



SBM-CMM-001



SBM-CMM-003
TwinBlade CMM Module



SBM-CMM-003
Mini CMM to be installed in
SBM-IBS-Q3616M

SuperBlade® Power Supply and Power Guide

NEW!

Key Advantages of Supermicro High-efficiency SuperBlade® Power Supplies

Availability - Non-stop power with N+1 redundant power supply modules

Cost Saving - At 94% peak efficiency, power consumption is significantly reduced, providing a planet-friendly, real-world advantage for our environment

Investment protection - Power capacity headroom for future generation processors

Easy installation - Snap-in installation from the back of the chassis, hot-swappable in operation

Intelligent power infrastructure - Each power enclosure includes a power management module that monitors the power supplies and the power enclosure that connects to the blade management.



| Part ID | PWS-1K62-BR | PWS-2K01-BR | PWS-2K53-BR |
|----------------------|---|--|---|
| Output | 1620W | 2000W | 2500W |
| Type | Redundant Module (N+1) | Redundant Module (N+1) | Redundant Module (N+1) |
| +12V | 132A (200-240VAC input) 100A (100-140 VAC input) | 167A | 208A |
| 5VSB | 16A | 16A | 16A |
| PFC | Yes | Yes | Yes |
| Peak Efficiency | 93% | 90% | 94% |
| Input AC Range | 100-240VAC | 200-240VAC | 200-240VAC |
| Operating Conditions | Temp: -5 to 50° C Humidity: 5 to 95% RH | Temp: -5 to 50° C Humidity: 5 to 95% RH | Temp: -5 to 50° C Humidity: 5 to 95% RH |
| Fan Type | 2x 90mm fans - PFC0912DE-6L38 (8000 RPM with PWM) | 4x 90mm fans - PFB0912DHE-6X39 (8000 RPM) - QFR0912UHE-6F78 (8300 RPM) | 4x 90mm fans - PFC0912DE-9E69 (8000 RPM) - QFR0912UHE-9E70 (8800 RPM) |

At the current time, the Supermicro® SuperBlade® is shipping with power supplies of 1400 Watts, 1620 Watts, 2000 Watts or larger. Although the Power Distribution Unit (Figure 3) that is recommended by Supermicro supports up to four power connections, only two connections should be made to each PDU. The PDU has a NEMA L6 connector that can plug into a NEMA L6 or equivalent socket. Each PDU, supporting two power supplies, must be plugged into a separate circuit that provides 30 Amps of power and a voltage ranging from 200-240V.

Table 1 below illustrates the various Power Supplies offered by Supermicro. This table shows the maximum power requirement of each model.

| SKU | Watts | Low Volts | High Volts | Low Amps | 10% Reserve | High Amps | 10% Reserve | Max Amps |
|-------------|-------|-----------|------------|----------|-------------|-----------|-------------|----------|
| PWS-2K53-BR | 2500 | 200 | 240 | 12.9 | 1.3 | 15.4 | 1.5 | 17 |
| PWS-2K01-BR | 2000 | 200 | 240 | 10.3 | 1.0 | 12.3 | 1.2 | 13.6 |
| PWS-1K62-BR | 1620 | 200 | 240 | 8.3 | 0.9 | 9.8 | 1.0 | 10.8 |
| PWS-1K62-BR | 1200 | 100 | 134 | 10.5 | 1.0 | 14.0 | 1.4 | 15.4 |

Table 1 - Power Supply Amperage Draw



Figure 1 - CBL-0223L 2000W/2500W Extension Cord



Figure 2 - CBL-0248L 1400W/1620W Extension Cord



Figure 3 - MCP-520-00036-0N Power Distribution Unit (PDU) with NEMA L6 plug

As an example, the 2000 Watt power supply can draw up to 13.6 Amps. Thus, for a single 30 Amp circuit supplying a PDU, no more than 2 power supplies may be connected to the PDU.

The Supermicro SuperBlade® product includes a power extension cord CBL-0223L for 2000W/2500W (Figure 1) or CBL-0248L for 1400W/1620W (Figure 2) system. The power cord typically connects the power supply to a Power Distribution Unit (Figure 3 - optional PDU) in an IT room. The PDU should supply input voltage ranging from 200V to 240V AC. As stated above, the circuit that the PDU plugs into should provide 30 Amps that is not shared by any other device.

Before beginning receptacle installation, consider the following:

- Observe all local electrical codes and practices.
- Ensure that the AC power receptacle is wired to the site AC power via conductors routed through flexible metal conduit or via approved AC power cable before installation.
- Ensure that AC power cord is properly sized, service rated, temperature rated, and complies with all applicable codes and regulations.
- Ensure that the conductors in conduit are properly sized, service rated, temperature rated, color coded, and comply with all applicable codes and regulations.
- Ensure that the AC power cord or conduit is long enough to reach from the site AC power junction box to a location within the distance required for the connection.
- Ensure that the number of power supplies connected to one circuit do not exceed the rated amperage of the circuit.

Please see table below which lists some examples of international power cords that are compatible with Supermicro.

| Country | Australia | China | Isreal | India / S. Africa | Italy | Euro | UK | US | US |
|--------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|---|----------------------------|-----------------------------|-------------------|
| Part Number | CBL-0238L (2000W/2500W) | CBL-0239L (2000W/2500W) | CBL-0243L (2000W/2500W) | CBL-0245L (2000W/2500W) | CBL-0244L (2000W/2500W) | CBL-0240L (2000W/2500W) | CBL-0241L (2000W/2500W) | CBL-0247L (2000W/2500W) | CBL-0250L (1620W) |
| Length | 2.5m | 2.5m | 2.5m | 2.5m | 2.5m | 2.5m | 2.5m | 2.5m | 6ft |
| Inlet | AS 3112 | GB-2099-1-1996 | SI32 | BS 546 | CEI 23-16 | "Schuko" CEE 7/7 | BS 1363 | NEMA L6-20 or equivalent | IEC-60320-C20 |
| Equip Outset | IEC-60320-C19 | IEC-60320-C19 | IEC-60320-C19 | IEC-60320-C19 | IEC-60320-C19 | IEC-60320-C19 | IEC-60320-C19 | IEC-60320-C19 | IEC-60320-C13 |
| Certificate | SAA | CCEE | SII | SABS | VDE, HAR | VDE, KEMA, CEBC, NEMKO, DEMKO, SETI, OVE, SEV | BSI | UL | UL/CUL |
| Current | 15A | 16A | 16A | 16A | 16A | 15A | 15A | 20A | 15A |
| Voltage | 250V | 250V | 250V | 250V | 250V | 250V | 250V | 250V | 250V |
| Image | | | | | | | | | |

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Electromagnetic Compatibility (EMC)

| | |
|------------------------|---|
| United States / Canada | FCC - Emissions (US) Verification |
| Europe | EN55022 - Emissions EN55024 - Immunity EN61000-3-2 - Harmonics EN61000-3-3 - Voltage Flicker CE- EMC Directive 89/336/EEC |

Safety Compliance

| | |
|------------------------|---|
| United States / Canada | UL60950-1 - CSA/CUL 60950-1 |
| Europe | TUV, EN60950-1, CE- Low Voltage Directive 73/23/EEE |

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