

**Intel[®] Server Boards S5000PSL, S5000XSL,
and S5000XVN,
Intel[®] Server Board S5000PSLROMB RAID
Controller,
Intel[®] Storage System SSR212MC2
Tested Memory Report**

Notice: This document will be discontinued in March 2009.

*Please refer to the Sever Configuration tool for a complete list of tested hard drives at:
<http://serverconfigurator.intel.com/default.aspx>*



Revision 47.0
February 2009

Revision History

| Date | Rev | Modifications |
|-----------|------|--|
| June 2006 | 1.0 | Release version |
| June 2006 | 2.0 | Removed Micron* 512MB part. Added Micron 1GB and 4GB part. Added Samsung* 512MB part. Added Hynix* 512MB and 1GB parts. (In shaded areas) |
| June 2006 | 3.0 | Added A-Data Technology*, ATP Electronics*, and Kingston* 1GB parts. Added ATP Electronics 2GB part. (In shaded areas) |
| July 2006 | 4.0 | Added Crucial Technology*, Kingston, and Hynix 512MB parts. Added Crucial Technology, Kingston, ATP Electronics, A-Data Technology, Hynix, and Samsung 1GB parts. Added ATP Electronics and Qimonda (Infineon)* 2GB parts. (In shaded areas) |
| Aug2006 | 5.0 | Added Dataram* 512MB part. Added Smart*, Dataram, and Kingston 1GB parts. (In shaded areas) |
| Aug 2006 | 6.0 | Added Ramaxel Technology* and Smart 512MB parts. Added Smart 1GB parts. Added ATP Electronics and Smart 2GB parts. (In shaded areas) Added section for the Intel® RAID Adapter S5000PSLROMB card supported memory. |
| Aug 2006 | 7.0 | Added Samsung and Qimonda 512MB parts. Added Kingston, Samsung, and Nanya* 1GB parts. (In shaded areas) |
| Oct 2006 | 8.0 | Added Legacy*, Kingston, Smart, and ATP Electronics 512MB parts. Added Kingston, Smart, Qimonda, and ATP Electronics 1GB parts. Added Smart and ATP Electronics 2GB parts. Updated server board and RAID adapter names. (In shaded areas) |
| Oct 2006 | 9.0 | Added Hynix 1GB part. (In shaded areas) |
| Nov 2006 | 10.0 | Added Wintec Industries* and Apacer* 512MB parts. Added Wintec Industries, Apacer, Ventura* and Kingston 1GB parts. Added Dataram, Kingston, Wintec Industries, and Apacer 2GB parts. Added Kingston 4GB part. (In shaded areas) |
| Jan 2007 | 11.0 | Added Kingston 512MB part. Added Smart, Super Talent Electronics, Kingston, A-Data Technology, Simple Tech, and Viking 1GB parts. Added Kingston, Smart, Super Talent Electronics, Ventura, and Viking 2GB parts. Added ATP Electronics 4GB part. (In shaded area) |
| Jan 2007 | 12.0 | Added Legacy and Hynix 1GB parts. Added Kingston, Qimonda, and Samsung 2GB parts. (In shaded area) |
| Jan 2007 | 13.0 | Added Kingston, Hynix, Qimonda, and Micron 512MB parts. Added Micron 1GB part. Added Samsung 4GB part. (In shaded area) |
| Feb 2007 | 14.0 | Added Samsung, Hynix, Qimonda, Legacy, ATP Electronics, Dataram, and Viking 512MB parts. Added Micron, Dataram, and Legacy 1GB parts. Added Qimonda and Buffalo 2GB parts. (In shaded area) |
| Feb 2007 | 15.0 | Added Dataram, Kingston, Viking, Micron, Qimonda, and Samsung 512MB parts. Added Kingston, S3+, Qimonda, Samsung, and Micron 1GB parts. Added Kingston, Legacy, Qimonda, Samsung, Hynix, and Micron 2GB parts. Added Kingston, Qimonda, and Micron 4GB parts. (In shaded area) |
| Feb 2007 | 16.0 | Added Qimonda 512MB part. Added Micron 1GB part. Added Viking, Micron, and Wintec 2GB parts. Added Legacy, Micron, Qimonda, and Samsung 4GB parts. Updated vendor contact information. (In shaded area) |
| Mar 2007 | 17.0 | Added AMB Vendor, AMB Rev, and Heat Sink Type information to some of the parts. Added Qimonda and Viking 1GB parts. Added Qimonda 2GB part. Added Samsung 4GB part. (In shaded area) |

| Date | Rev | Modifications |
|------------|------|---|
| Mar 2007 | 18.0 | Updated contact information. Added Netlist, Inc. and Smart 1GB parts. (In shaded area) |
| April 2007 | 19.0 | Added Kingston, ATP Electronics, Micron, and STEC Inc.* 1GB parts. Added ATP Electronics, Micron, and Hynix 2GB parts. Added Micron 4GB part. (In shaded area) |
| May 2007 | 20.0 | Added Smart, Micron, and Dataram 1GB parts. Added Kingston, STEC Inc., Dataram, and Micron 2GB parts. (In shaded area) |
| May 2007 | 21.0 | Added section 2.2: clarification for acoustics versus performance mode. Corrected product name from SROMBSAS18E to S5000PSLROMB and added supported memory sizes. Additional memory parts added. (In shaded area) |
| June 2007 | 22.0 | Additional memory parts added. (In shaded area) |
| July 2007 | 23.0 | Additional memory parts added. (In shaded area) |
| Aug 2007 | 24.0 | Intel® Storage System SSR212MC2 added to list. Additional memory parts added. (In shaded area) |
| Oct 2007 | 25.0 | Updated some contact information. Additional memory parts added. (In shaded area) |
| Oct 2007 | 26.0 | Corrected 4 GB part number (in shaded area). |
| Nov 2007 | 27.0 | Added a note on product codes covered by this list. Added an AMB revision notes. Added additional memory parts (in shaded area). |
| Jan2008 | 28.0 | Added additional memory parts (in shaded area). |
| Feb 2008 | 29.0 | Added additional memory parts (in shaded area). |
| Mar 2008 | 30.0 | Added additional memory parts (in shaded area). |
| April 2008 | 31.0 | Added additional memory parts (in shaded area). |
| May 2008 | 32.0 | Added additional memory parts (in shaded area). |
| May 2008 | 33.0 | Added additional memory parts (in shaded area). |
| June 2008 | 34.0 | Added additional memory parts (in shaded area). |
| June 2008 | 35.0 | Added additional memory parts (in shaded area). |
| July 2008 | 36.0 | Correction to Qimonda 2GB part number. Added additional memory parts (in shaded area). |
| July 2008 | 37.0 | Added additional memory parts (in shaded area). Update contact information for MSC Vertriebs GmbH |
| Aug 2008 | 38.0 | Added additional memory parts (in shaded area). |
| Aug 2008 | 38.0 | Added additional memory parts (in shaded area). |
| Sept 2008 | 40.0 | Added additional memory parts (in shaded area). |
| Oct 2008 | 41.0 | Added additional memory parts (in shaded area). |
| Nov 2008 | 42.0 | Added additional memory parts (in shaded area). |
| Nov 2008 | 43.0 | Added additional memory parts (in shaded area). |
| Dec 2008 | 44.0 | Added additional memory parts (in shaded area). |
| Jan 2009 | 45.0 | Added support for 8G modules. Added additional memory parts (in shaded area). |
| Feb 2009 | 46.0 | Added additional memory parts (in shaded area). |

Revision History

| Date | Rev | Modifications |
|----------|------|---|
| Feb 2009 | 47.0 | Added additional memory parts (in shaded area). Note: Supported adapters, peripherals, hard drives and memory have been added for each Intel® Server product in the Server Configurator Tool. This document will be discontinued in March 2009. Please refer to the Sever Configuration tool for a complete list of tested memory at: http://serverconfigurator.intel.com/default.aspx |

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The Intel® Server Boards S5000PSL, S5000XSL, and S5000XVN, the Intel® Server Board S5000PSLROMB RAID Controller, and the Intel® Storage System SSR212MC2 may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request.

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Please Note: DIMM devices with gold contacts should NOT be placed into DIMM sockets with tin-lead contacts or vice-versa. Mixing dissimilar metal contact types has been shown to result in unreliable memory operation. Intel recommends similar manufacturer and similar speeds in each Rank on the memory module. Mixing of dissimilar memory is NOT recommended.

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1. Overview of Memory Testing

The following test processes are used to qualify Dual In-Line Memory Modules (DIMMs) for use with the Intel® Server Boards S5000PSL, S5000XSL, and S5000XVN, the Intel® Server Board S5000PSLROMB RAID Controller, and the Intel® Storage System SSR212MC2. Memory is a vital subsystem in a server. Intel requires that strict guidelines be met before a DIMM vendor is added to the Tested Memory Report. To be included on the list as a fully supported DIMM, the memory must undergo rigorous tests to ensure that the product will perform the intended server product functions. Memory qualification for Intel server, workstation and RAID controller products is performed both by Intel's Memory Validation Lab (MVL) and by an independent external test lab, Computer Memory Test Lab* (CMTL).

Note: This tested memory list applies to all product codes in the Intel® Server Board S5000PSL/S5000XSL/S5000XVN family.

The Tested Memory Lists for Intel's server boards, workstation boards, and RAID controller products categorize memory modules as Advanced Tested. The Advanced Testing process includes a standard paper qualification and then is followed by two levels of functional testing. DIMMs that have completed and passed Advanced Testing are considered to be compatible with the product on which they were tested, and with the test software and operating systems that was used during the test process.

Note: Memory qualification for main memory is done by testing identical memory modules in all DIMM slots. Memory qualification does not include testing of mixed DIMM type and/or vendors. Mixing of DIMM type and/or vendors is not recommended.

1.1 Paper Qualification

A paper qualification is performed to verify that the specifications of a given DIMM meet Intel's memory specifications for a given product. Specification criteria reviewed include: critical timings, electrical characteristics, timing requirements, environmental requirements, and packaging requirements.

1.2 Functional Testing

After a given DIMM passes the standard paper qualification, functionality of the DIMM is then tested with the intended Intel product. Two levels of functional testing are performed; standard and advanced.

Standard functional testing requires that the given DIMM and Intel product combination operate with no failures for a period of no less than 24 hours for both minimum and maximum DIMM configurations. Testing is performed using a Microsoft Windows* operating system and a custom test package. The test systems operate with standard voltage and at room temperature.

1.3 Advanced Functional Testing

Advanced functional testing requires that the given DIMM and Intel product combination operate with no failures for a period of no less than 24 hours for both minimum and maximum DIMM configurations. Testing is performed with multiple operating systems and various custom test packages. Each test configuration is tested with various voltage and temperature margin conditions.

1.4 Computer Memory Test Lab*

Computer Memory Test Lab, also known as "CMTL*" is a leading memory test organization responsible for testing a broad range of memory products. A memory product, which receives a "PASS" after being tested by CMTL, means it functions correctly and consumers can use the product to perform the intended server functions. In order to pass these stringent standards, memory products must maintain the highest manufacturing procedures and pass an exacting battery of tests. Testing is performed with Intel supplied equipment and procedures defined by Intel's various functional testing levels.

CMTL* Contact Information:

Office: (949) 716-8690

Main Fax: (949) 716-8691

Computer Memory Test Lab (CMTL)

24 Hammond Suite F

Irvine, CA 92618

<http://www.cmtlabs.com/>

2. Intel® Server Boards S5000PSL, S5000XSL, and S5000XVN, Intel® Server Board S5000PSLROMB RAID Controller, and Intel® Storage System SSR212MC2 Memory Sub-system

The Intel® Server Boards S5000PSL, S5000XSL, and S5000XVN, the Intel® Server Board S5000PSLROMB RAID Controller, and the Intel® Storage System SSR212MC2 main memory subsystem was designed to support Fully Buffered Dual In-line (FBDIMM) Registered DDR2-533 and DDR2-667 FBDIMM memory ECC Synchronous Dynamic Random Access Memory (SDRAM). Other industry naming conventions for DDR2-533 include PC2-4200 and DDR2-667 include PC2-5300.

The maximum main memory capacity supported is based on the number of DIMM slots provided and maximum supported memory loads by the chipset. On the Intel® Server Board S5000PSL the maximum supported capacity is 32GB, the minimum supported capacity is 512MB with one single 512MB DIMM.

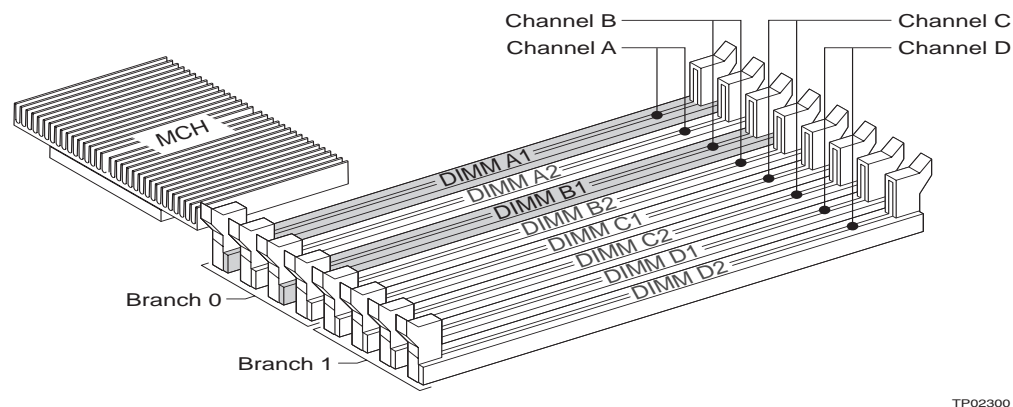
Supported FBDIMM capacities for main memory include: 256MB, 512MB, 1GB, 2GB, and 4GB.

2.1 Main Memory Population

The Intel® Server Board S5000PSL has eight DIMM slots grouped into four DIMM channels for main memory. DIMMs within each bank should be identical (same manufacturer, CAS latency, number of rows, columns and devices, timing parameters etc.). Although DIMMs within a bank must be identical, the BIOS supports various DIMM sizes and configurations allowing memory between banks to be different. Memory sizing and configuration is guaranteed only for qualified DIMMs approved by Intel.

DIMM population rules depend on the operating mode of the memory controller, which is determined by the number of DIMMs installed. DIMMs must be populated in pairs. DIMM pairs are populated in the following DIMM slot order: A1 & B1, C1 & D1, A2 & B2, C2 & D2. DIMMs within a given pair must be identical with respect to size, speed, and organization. However, DIMM capacities can be different between different DIMM pairs.

For example, a valid mixed DIMM configuration may have 512MB DIMMs installed in DIMM Slots A1 & B1, and 1GB DIMMs installed in DIMM slots C1 & D1.



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Figure 1. Identifying Banks of Memory

2.1.1 Memory Sub-system

The MCH masters four fully buffered DIMM (FBD) memory channels. FBD memory utilizes a narrow high speed frame oriented interface referred to as a channel. The four FBD channels are organized into two branches of two channels per branch. Each branch is supported by a separate memory controller. The two channels on each branch operate in lock step to increase FBD bandwidth. On the server board, the four channels are routed to eight DIMM slots and are capable of supporting registered DDR2-533 and DDR2-667 FBDIMM memory (stacked or unstacked). Peak theoretical memory data bandwidth is 6.4GB/s with DDR2-533 and 8.0GB/s with DDR2-667.

On the Intel® Server Boards S5000PSL, S5000XSL, and S5000XVN, the Intel® Server Board S5000PSLROMB RAID Controller, and the Intel® Storage System SSR212MC2, a pair of channels becomes a branch where Branch 0 consists of channels A and B, and Branch 1 consists of channels C and D. FBD memory channels are organized into two branches for support of RAID 1(mirroring).

The server board supports up to eight DDR2-533 or DDR2-667 Fully Buffered DIMMs (FBD memory). The following tables show the maximum memory configurations supported using the specified memory technology.

Maximum 8 DIMM System Memory Configuration – x8 Single Rank

| DRAM Technology x8 Single Rank | Maximum Capacity Mirrored Mode | Maximum Capacity Non-Mirrored Mode |
|---|---|---|
| 256 Mb | 1 GB | 2 GB |
| 512 Mb | 2 GB | 4 GB |
| 1024 Mb | 4 GB | 8 GB |
| 2048 Mb | 8 GB | 16 GB |

Maximum 8 DIMM System Memory Configuration – x4 Dual Rank

| DRAM Technology x4 Dual Rank | Maximum Capacity Mirrored Mode | Maximum Capacity Non-Mirrored Mode |
|---|---|---|
| 256 Mb | 4 GB | 8 GB |
| 512 Mb | 8 GB | 16 GB |
| 1024 Mb | 16 GB | 32 GB |
| 2048 Mb | 16 GB | 32 GB |

Note: DDR2 DIMMs that are not fully buffered are NOT supported on this server board.

The following table lists the current supported memory types:

| FBDIMM-533 CL4 & FBDIMM-667 CL5 Memory Matrix | | | | | | |
|--|--------------------------|----------------------|---------------------------|------------------------|---------------------------------------|-------------------|
| DIMM Capacity | DIMM Organization | SDRAM Density | SDRAM Organization | # SDRAM Devices | # Address bits Row/Bank/Column | # of Ranks |
| 512MB | 64M x72 | 512Mbit | 64M x 8 | 9 | 14/10/2 | 1 |
| 1GB | 128M x 72 | 512Mbit | 64M x 8 | 18 | 14/10/2 | 2 |
| 1GB | 128M x 72 | 512Mbit | 128M x 4 | 18 | 14/11/2 | 1 |
| 1GB | 128M x 72 | 512Mbit | 128M x 8 | 9 | 14/10/3 | 1 |
| 2GB | 256M x72 | 512Mbit | 128M x 4 | 36 | 14/11/2 | 2 |
| 2GB | 256M x72 | 1Gbit | 256M x 4 | 18 | 14/11/3 | 1 |
| 2GB | 256M x72 | 1Gbit | 128M x 8 | 18 | 14/10/3 | 2 |
| 4GB | 512M x72 | 1Gbit | 256M x 4 | 36 | 14/11/3 | 2 |
| 4GB | 512M x 72 | 2Gbit | 512M x 4 | 18 | 13/11/2 | 2 |
| 8GB | 1Gx72 | 2Gbit | 512M x 4 | 36 | 15/3/11 | 2 |
| 8GB | 1Gx72 | 2Gbit | Stacked 1G x 4 | 18 | 15/3/11 | 2 |

2.2 Acoustic versus Performance Mode for System Fan Control

2.2.1 Memory Sizing and Configuration

The BIOS supports various memory module sizes and configurations. These combinations of sizes and configurations are valid only for FBDIMMs approved by Intel. The BIOS reads the Serial Presence Detect (SPD) EEPROMs on each installed memory module to determine the size and timing characteristics of the installed memory modules (FBDIMMs). The memory-sizing algorithm then determines the cumulative size of each row of FBDIMMs. The BIOS programs the memory controller in the chipset accordingly, such that the range of memory accessible from the processor is mapped into the correct FBDIMM, or set of FBDIMMs.

2.2.2 Performance Configuration in BIOS Setup (Default)

In performance mode, the system will utilize fan control over memory throttling to provide primary system cooling. This mode results in a moderately louder system than acoustic mode due to more aggressive fan speed control settings. Independent of the system's temperature level, the fan speed in performance mode will be slightly higher than the fan speed in acoustic mode. Additionally, at a given temperature, the increased airflow from this cooling option diminishes the occurrence of memory throttling. This enables high-power DIMMs (typically DRx4) to operate at their maximum capacity since these DIMMs produce a higher thermal output from their higher bandwidth.

Note: this is the recommended mode when using DRx4 memory modules.

2.2.3 Acoustic Configuration in BIOS Setup

In acoustic mode, the system temperature is maintained primarily by memory throttling, so the utilization of high fan speeds is reduced. As a result, this mode produces a quieter system because the fans will run at a lower speed if the system does not require additional cooling. However, the memory throttling

Memory Sub-system

utilized in this mode could lower memory performance for high-power DIMMs (typically DRx4 or better) because these DIMMs cause a higher thermal output when reaching optimal memory bandwidth.

Note: this is the recommended mode when using DRx8 memory modules.

3. Intel® Server Boards S5000PSL, S5000XSL, and S5000XVN, and Intel® Storage System SSR212MC2 Main Memory Tested

The following tables list DIMM devices tested to be compatible with the Intel® Server Boards S5000PSL, S5000XSL, and S5000XVN, and the Intel® Storage System SSR212MC2. The list of tested memory is periodically updated as qualified memory is added during the production life of the Intel product.

Only Registered ECC Fully Buffered (FBDIMM) memory is support in the main memory of all these server products.

Memory modules not listed in the following tables have not been tested for compatibility and their use with the Intel® Server Boards S5000PSL, S5000XSL, and S5000XVN, and the Intel® Storage System SSR212MC2, may result in unpredictable operation and data loss.

Caution: Third party memory vendors may use the same module part number with different DRAM vendors and die revisions. To insure proper system operation, verify that each DRAM vendor and die revision has been separately tested and qualified. Please notify CMTL if there is a discrepancy. This list is subject to change without notice.

Note: This list is not intended to be all-inclusive. It is provided as a convenience to Intel's general customer base, but Intel does not make any representations or warranties whatsoever regarding the quality, reliability, functionality, or compatibility of these memory modules.

Intel® Server Boards S5000PSL, S5000XSL, S5000XVN, and Intel® Storage System SSR212MC2
Fully Buffered ECC, DDR2-533 DIMM Modules
512 MB Sizes (64Mx72)

| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
|----------------------------|-----------------------------|-------------------------|--------------------|---------------------------------|------------|--------------------|------------------|------|----------|
| Samsung | M395T6553CZ4-CD51 | K4T51083QC-ZCD5 | Samsung | | IDT 1.5 | AMB0480 A5RJ A1.5 | | 1 | 6/1/06 |
| Hynix | HYMP564F72BP-8D2-C4 | HY5PS12821BFP-C4 | Hynix | | IDT 1.5 | AMB0480 A5RJ | | 1 | 6/15/06 |
| Crucial Technology | CT9HTF6472FY-53EB4E3.01 | MT47H64M8CB-37E rev B | Micron | 0499 rev B | Intel | D1 | Foxconn | 1 | 7/5/06 |
| Kingston | KVR533D2S8F4/512I | E5108AE-5C-E rev E | Elpida | 2025285-002.A00 na | Intel | C0 | Foxconn | 1 | 6/30/06 |
| Ramaxel Technology | 00124025 | EDE5108AGSE-5C-E rev G | Elpida | 11113004(RPP10910 812J61) rev B | Intel | D1 | AVC | 1 | 7/27/06 |
| Smart Modular Technologies | SG647FBD6484-3-IAI | HYB18T512800AF3-7 rev A | Qimonda (Infineon) | 240-21-4 na | Intel | D1 | Logitex | 1 | 8/8/06 |
| Legacy Electronics Inc. | B557K4C90AE-37R | K4T51083QC-ZCD5 rev C | Samsung | D2F18A na | NEC | B5 ² | AVC | 1 | 8/15/06 |
| Kingston | KVR533D2S8F4/512I | E5108AGBG-5C-E rev G | Elpida | 2025285-002.A00 na | Intel | D1 | Foxconn | 1 | 9/7/06 |
| Smart Modular Technologies | TD647FBD6484-3SCI | K4T51083QC-ZCD5 rev C | Samsung | PG54G240 NFBUB3R A rev A | Intel | C0 | Foxconn | 1 | 9/11/06 |
| Smart Modular Technologies | TD647FBD6484-3IAI | HYB18T512800AF3-7 rev A | Qimonda (Infineon) | PG54G240 NFBUB3R A rev A | Intel | C0 | Foxconn | 1 | 9/12/06 |
| Apacer | 78.9DG96.404 | K4T51083QC-ZCD5 rev C | Samsung | 48.16203.014 rev 4 | Intel | D1 | Foxconn | 1 | 11/9/06 |
| Kingston | KVR533D2S8F4/512I (INT/INF) | HYB18T512800AF-3.7-A | Kingston | | Intel | GB C0 ¹ | FDHS | 1 | 6/13/06 |
| Hynix | HYMP564F72BP-8N2-C4 | HY5PS12821BFP-C4 | Hynix | | Intel | GB C0 ¹ | FDHS | 1 | 12/13/06 |
| Qimonda | HYS72T64400H-FN-3.7-A | HYB18T512800AF | Qimonda | | Intel | GB C0 ¹ | FDHS | 1 | 12/13/06 |
| Qimonda | HYS72T64400H-FN-3.7-B | HYB18T512800AF | Qimonda | | Intel | D1 | FDHS | 1 | 12/13/06 |
| Hynix | HYMP564F72BP-8D2-C4 | HY5PS12821BFP-C4 | Hynix | | IDT | 1.5 | FDHS | 1 | 1/24/07 |
| Qimonda | HYS72T64400H-FD-3.7-B | HYB18T512800AF | Qimonda | | IDT | 1.5 | FDHS | 1 | 1/29/07 |
| Viking | VR5EF647218E-BSL1 | HYB18T512800BF3-7 rev B | Qimonda | D2F18A | IDT | A1.5 | Foxconn | 1 | 1/28/07 |

¹ The GB C0 AMB revision does not support closed-loop throttling.

² This part may show voltage errors in the System Event Log (SEL) during boot. These errors will not affect system operation and can be ignored.

| Fully Buffered ECC, DDR2-533 DIMM Modules | | | | | | | | | |
|--|-----------------------|-------------------------|--------------------|-------------------------|-------------------|---------------------|-------------------------|-------------|-------------|
| 512 MB Sizes (64Mx72) | | | | | | | | | |
| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
| Kingston | KVR533D2S8F4 /512I | E5108AGBG-6E-E rev G | Elpida | 2025285-002.A00 na | Intel | D1 | Foxconn | 1 | 2/3/07 |
| Qimonda | HYS72T64400H FD-3.7-A | HYB18T512800AF-3.7-A | Qimonda | | IDT | 1.5 | FDHS | 1 | 2/13/07 |
| Samsung | M395T6553CZ4-CD50 | | Samsung | | Intel | GB C0 ¹ | FDHS | 2 | 2/13/07 |
| Qimonda | HYS72T64400H FA-3.7-B | HYB18T512800BF-3.7-B | Qimonda | | Qimonda | C1 | FDHS | 1 | 2/26/07 |
| Fully Buffered ECC, DDR2-667 DIMM Modules | | | | | | | | | |
| 512 MB Sizes (64Mx72) | | | | | | | | | |
| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
| Hynix | HYMP564F72BP 8N2-Y5 | HY5PS12821BFP-Y5 | Hynix | | Intel | | | 1 | 7/13/06 |
| Dataram | DTM65506A | NT5TU64M8AE-3C rev A | Nanya | 40053A rev B | Intel | D1 | Foxconn | 1 | 7/18/06 |
| Qimonda | HYS72T64400H FN-3S-A | HYB18T512800AF | Qimonda (Infineon) | | Intel | | | 1 | 8/2/06 |
| Samsung | M395T6553CZ4-CE61 | K4T51083QC | Samsung | | IDT | | | 1 | 8/2/06 |
| Samsung | M395T6553CZ4-CE60 | K4T51083QC | Samsung | | Intel | | | 1 | 8/15/06 |
| Smart Modular Technologies | SG647FBD6485 2IAD5 | HYB18T512800AF3 S rev A | Qimonda (Infineon) | PG54G240 NFBUB3RA rev A | IDT | A1.5 | Foxconn | 1 | 8/12/06 |
| ATP Electronics | AP64K72A8BHE 6S | K4T51083QC-ZCE6 rev C | Samsung | SP240A08K 1 na | IDT | A1.5 | Foxconn | 1 | 8/15/06 |
| ATP Electronics | AP64K72A8BHE 6S | K4T51083QC-ZCE6 rev C | Samsung | SP240A08K 1 na | NEC | B5 ² | Foxconn | 1 | 8/25/06 |
| Kingston | KVR667D2S8F5 /512I | E5108AGBG-6E-E rev G | Elpida | 2025285-002.A00 na | Intel | D1 | Foxconn | 1 | 9/14/06 |
| Wintec Industries | 39C925284C | K4T51083QC-ZCE6 rev C | Samsung | D2F18A rev A | IDT | A1.5 | Foxconn | 1 | 10/12/06 |
| Apacer | 78.9DG99.404 | K4T51083QC-ZCE6 rev C | Samsung | 48.16203.01 4 rev 4 | Intel | D1 | Foxconn | 1 | 10/25/06 |
| Kingston | KVR667D2S8F5 /512I | E5108AGBG-6E-E rev G | Elpida | 2025285-002.A00 na | Intel | D1 | Foxconn | 1 | 12/11/06 |
| Micron | MT9HTF6472FY -667B4E3 | MT47H64M8CB-3 | Micron | | Intel | GB C0 ¹ | FDHS | 1 | 8/24/06 |
| Hynix | HYMP564F72BP 8D2-Y5 | HY5PS12821BFP-Y5 | Hynix | | IDT | 1.5 | FDHS | 1 | 11/10/06 |
| Qimonda | HYS72T64400H FA-3S-B | HYB18T512800AF | Qimonda | | Qimonda | C1 | FDHS | 1 | 12/13/06 |
| Samsung | M395T6553EZ4-CE65 | K4T51083QE | Samsung | | Intel | GB D1 | FDHS | 1 | 1/29/07 |
| ATP Electronics | AP64K72A8BHE 6S | K4T51083QE-ZCE6 rev E | Samsung | D2F18A na | NEC | B5 ² | Foxconn | 1 | 1/24/07 |
| Dataram | DTM65506C | HY5PS12821CFP-Y5 rev C | Hynix | 40053A rev B | Intel | D1 | Foxconn | 1 | 1/26/07 |
| Legacy Electronics Inc. | N557K4C90AN-30R | EDE5108AHBG-6E-E rev H | Elpida | D2F18A | NEC | B5 ² | AVC | 1 | 1/18/07 |

| Fully Buffered ECC, DDR2-667 DIMM Modules 512 MB Sizes (64Mx72) | | | | | | | | | |
|--|----------------------|---------------------------|--------------------|---------------------------|-------------------|---------------------|-------------------------|-------------|-------------|
| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
| Legacy Electronics Inc. | B557K4C90AN-30R | K4T51083QC-ZCE6 rev C | Samsung | D2F18A rev A | NEC | B5 ² | AVC | 1 | 1/17/07 |
| Legacy Electronics Inc. | N557K4C90AE-30R | E5108AHBG-6E-E rev H | Elpida | D2F18A rev A | IDT | A1.5 | AVC | 1 | 1/21/07 |
| Legacy Electronics Inc. | B557K4C90AE-30R | K4T51083QC-ZCE6 rev C | Samsung | D2F18A rev A | IDT | A1.5 | AVC | 1 | 1/24/07 |
| Viking | VR5EF647218E BWL1 | HYB18T512800BF3 S rev B | Qimonda | D2F18A | IDT | A1.5 | Foxconn | 1 | 1/15/07 |
| Dataram | DTM65506C | HY5PS12821CFP-Y5 rev C | Hynix | 40053A rev B | INTEL | D1 | Foxconn | 1 | 1/26/07 |
| Micron | MT9HTF6472FY-667D5E4 | MT47H64M8-3 | Micron | | Intel | GB D1 | FDHS | 1 | 2/5/07 |
| Qimonda | HYS72T64400H FN-3S-B | HYB18T512800AF-3S-B | Qimonda | | Intel | D1 | FDHS | 1 | 2/9/07 |
| Qimonda | HYS72T64400H FD-3S-B | HYB18T512800AF-3S-B | Qimonda | | IDT | C1 | FDHS | 1 | 2/13/07 |
| Kingston | KVR667D2S8F5/512I | NT5TU64M8BE-3C rev B | Nanya | 2025285-002.A00 na | Intel | D1 | Foxconn | 1 | 5/18/07 |
| Apacer | 75.963AI.G00 | K4T51083QE-ZCE6 rev E | Samsung | 48.16203.094 rev 4 | | D1 | AVC | | 5/28/07 |
| Micron | MT9HTF6472FY-667D5D4 | MT47H64M8B6-3:D | Micron | | IDT | C1 | FDHS | 1 | 6/18/07 |
| Crucial Technology | CT6472AF667.9 FD5D4 | MT47H64M8B6-3:D | Micron | | IDT | C1 | FDHS | 1 | 6/18/07 |
| Crucial Technology | CT6472AF667.9 FD5E4 | MT47H64M8B6-3:D | Micron | | Intel | GB D1 | FDHS | 1 | 6/18/07 |
| Samsung | M395T6553EZ4-CE66 | K4T51083QE | Samsung | | IDT | C1 | FDHS | 1 | 6/18/07 |
| Hynix | HYMP564F72C P8N3-Y5 | HY5PS12821CFP-Y5 | Hynix | | Intel | GB D1 | FDHS | 1 | 6/18/07 |
| Hynix | HYMP564F72C P8D3-Y5 | HY5PS12821CFP-Y5 | Hynix | | IDT | C1 | FDHS | 1 | 6/18/07 |
| Qimonda | HYS72T64400H FE-3S-B | HYB18T512800AF | Qimonda | | NEC | B5+ | FDHS | 1 | 6/18/07 |
| STEC | INT72W8M64M8M-A03GZU | K4T51083QE-ZCE6 rev E | Samsung | D2F18A na | IDT | C1 | AVC | 1 | 7/26/07 |
| Smart Modular Technologies | SG647FBD6485-2IBD5 | HYB18T512800BF-3S rev B | Qimonda | PG54G240 NFBUB4RA S rev A | IDT | A1.5 | Foxconn | 1 | 8/06/07 |
| Dataram | DTM65506E | HYB18T512800BF3 S rev B | Qimonda | 40053A rev B | INTEL | D1 | Foxconn | 1 | 9/13/07 |
| Qimonda | HYS72T64520H FD-3S-B | HYB18T512800BF-3S-B | Qimonda | | IDT | C1 | FDHS | 1 | 11/19/07 |
| Dataram | DTM65506F | HYB18T512800B2F-3S rev B2 | Qimonda | 40053A rev B | IDT | C1 | Foxconn | 1 | 2/28/08 |
| Dataram | DTM65506F | HYB18T512800B2F-3S rev B2 | Qimonda | 40053A rev B | IDT | C1 | Foxconn | 1 | 02/28/08 |

¹ The GB C0 AMB revision does not support closed-loop throttling.

² This part may show voltage errors in the System Event Log (SEL) during boot. These errors will not affect system operation and can be ignored.

Main Memory Tested

(+) This vendor is part of the CMTL Certification program. This means this part has/will be tested across all compatible Intel Server Boards. For further information contact CMTL @ <http://cmtlabs.com/>

Note: Some memory modules may have thermal issues when used in a non-Intel 1U rack solution. It is advised that you verify any thermal limitations with your chassis supplier before purchasing a chassis.

Note: The use of x4 FBDIMMs will only be supported with the server system operating in "Performance" mode (default). The use of x4 FBDIMMs while the server system is configured to operate in "Acoustics" mode is not supported.

Intel® Server Boards S5000PSL, S5000XSL, S5000XVN, and Intel® Storage System SSR212MC2
Fully Buffered ECC, DDR2-533 DIMM Modules
1 GB Sizes (128Mx72)

| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
|----------------------------|-----------------------------|-------------------------|--------------------|---------------------------------|---------------------|-------------------------|------------------|------|---------|
| Samsung* | M395T2953CZ4-CD51 | K4T51083QC-ZCD5 | Samsung | | IDT | AMB0480 A5RJ A1.5 | | 2 | 5/18/06 |
| Kingston* | KVR533D2D8F4/1 GI | HYB18T512800 AF-3.7 | Qimonda (Infineon) | | IDT | AMB0480 A5RJ A1.5 | | 2 | 5/26/06 |
| Kingston | KVR533D2D8F4/1 GI | HYB18T512800 AF-3.7 | Qimonda (Infineon) | | Intel | QG6400C 0 | | 2 | 5/26/06 |
| Hynix* | HYMP512F72BP8 D2-C4 | HY5PS12821BF P-C4 | Hynix | | IDT | AMB0480 A5RJ A1.5 | | 2 | 6/1/06 |
| Micron | MT18HTF12872F DY-53EB5E3 | MT47H64M8CB-37E | Micron | | Intel | QG6400 C0 | | 2 | 6/1/06 |
| Hynix | HYMP512F72BP8 N2-C4 | HY5PS12821BF P-C4 | Hynix | | Intel | QG6400 C0 | | 2 | 6/15/06 |
| A-Data Technology | EDE5108AGSE-5C-E rev G | M2OEL2G3IBC4 211B5Z | Elpida | | Intel QG6400 | SL96G | Foxconn | 2 | 6/22/06 |
| ATP Electronics | K4T51083QC-ZCD5 rev C | AP28K72S8BHD 5S | Samsung | | IDT 0480A5R J | Y0604D | Foxconn | 2 | 6/22/06 |
| Kingston | KVR533D2D8F4/1 GI | E5108AE-5C-E rev EI | Elpida | | Intel QG6400 | SL96G | Foxconn | 2 | 6/22/06 |
| A-Data Technology | M2OEL2G3IBC421 1B5Z | EDE5108AGSE-5C-E rev G | Elpida | B62FRCB na | | | | 2 | 6/21/06 |
| ATP Electronics | AP28K72S8BHD5 S | K4T51083QC-ZCD5 rev C | Samsung | SP240S08K 1 na | IDT | A1.5 | Foxconn | 2 | 6/20/06 |
| Crucial Technology | CT18HTF12872F DY53EB5E3.01 | MT47H64M8CB-37E rev B | Micron | 500 rev C | Intel | D1 | Foxconn | 2 | 7/10/06 |
| Kingston | KVR533D2D8F4/1 GI | E5108AE-5C-E rev E | Elpida | 2025286- 002.A00 na | Intel | C0 | Foxconn | 2 | 6/15/06 |
| Smart Modular Technologies | SG1287FBD64843 SCI | K4T51083QC-ZCD5 rev C | Samsung | PG58G240 NFBUB3RB rev B | Intel | D1 | Foxconn | 2 | 7/12/06 |
| Smart Modular Technologies | TD1287FBD64843 SCI | K4T51083QC-ZCD5 rev C | Samsung | PG58G240 NFBUB3RB S rev B | Intel | C0 | Foxconn | 2 | 7/17/06 |
| Smart Modular Technologies | TD1287FBD64843 IAI | HYB18T512800 AF37 rev A | Qimonda (Infineon) | PG58G240 NFBUB3RB S rev B | Intel | C0 | Foxconn | 2 | 7/18/06 |
| Kingston | KVR533D2D8F4/1 GI | E5108AG-5C-E rev G | Elpida | 2025286- 002.A00 na | Intel | C0 | Foxconn | 2 | 7/20/06 |
| Kingston | KVR533D2D8F4/1 GI (INT/INF) | HYB18T512800 AF-3.7-A | Kingston | | Intel | | | 2 | 8/2/06 |
| Smart Modular Technologies | SG1287FBD64843 NAI | NT5TU64M8AE-3C rev A | Nanya | PG58G240 NFBUB3RB rev C | Intel | D1 | Foxconn | 2 | 7/23/06 |
| Smart Modular Technologies | SG1287FBD64843 -IAI | HYB18T512800 AF37 rev A | Qimonda (Infineon) | 240-22-5 na | Intel | C0 | Logitex | 2 | 8/8/06 |
| Kingston | KVR533D2D8F4/1 GI | E5108AGBG-5C-E rev G | Elpida | 2025286- 002.A00 na | Intel | C0 | Foxconn | 2 | 8/14/06 |

| Fully Buffered ECC, DDR2-533 DIMM Modules 1 GB Sizes (128Mx72) | | | | | | | | | |
|---|-----------------------------|-------------------------|--------------------|-------------------------|-------------------|---------------------|-------------------------|-------------|-------------|
| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
| Apacer | 78.0DG96.405 | K4T51083QC-ZCD5 rev C | Samsung | 48.16203.015 rev 5 | Intel | D1 | Foxconn | 2 | 11/9/06 |
| Kingston | KVR533D2D8F4/1 GI | E5108AGBG-6E-E rev G | Elpida | 2025286-002.A00 na | Intel | C0 | Foxconn | 2 | 11/13/06 |
| Micron | MT18HTF12872FDY-53EB5D3 | MT47H64M8B6-37E | Micron | | IDT | 1.5 | FDHS | 2 | 11/10/06 |
| Kingston | KVR533D2D8F4/1 GI | E5108AGBG-6E-E rev G | Elpida | 2025286-002.A00 na | Intel | D1 | Foxconn | 2 | 2/3/07 |
| Qimonda | HYS72T128420HFD-3.7-B | HYB18T512800AF | Qimonda | | IDT | 1.5 | FDHS | 2 | 2/13/07 |
| Qimonda | HYS72T128420HFN-3.7-B | HYB18T512800AF-3.7-B | Qimonda | | Intel | D1 | FDHS | 2 | 2/13/07 |
| Samsung | M395T2953CZ4-CD50 | | | | Intel | GB C0 ¹ | FDHS | 2 | 2/13/07 |
| Qimonda | HYS72T128420HFN-3.7-A | HYB18T512800AF-3.7-A | Qimonda | | Intel | GB C0 ¹ | FDHS | 2 | 3/12/07 |
| Qimonda | HYS72T128420HFA-3.7-B | HYB18T512800AF-3.7-B | Qimonda | | Qimonda | C1 | FDHS | 2 | 3/12/07 |
| Kingston | KVR533D2D8F4/1 GI (INT/INF) | HYB18T512800AF-3.7-A | Kingston | | Intel | GB C0 ¹ | FDHS | 2 | 3/28/07 |
| Fully Buffered ECC, DDR2-677 DIMM Modules 1 GB Sizes (128Mx72) | | | | | | | | | |
| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
| Samsung | M395T2953CZ4-CE60 | K4T51083QC | Samsung | | Intel | | | 2 | 7/13/06 |
| Hynix | HYMP512F72BP8N2-Y5 | HY5PS12821BFP-Y5 | Hynix | | Intel | | | 2 | 7/13/06 |
| Dataram | DTM65507A | NT5TU64M8AE-3C rev A | Nanya | 40053A rev B | Intel | D1 | Foxconn | 2 | 7/20/06 |
| Smart Modular Technologies | SG1287FBD64852SCD5 | K4T51083QC-ZCE6 rev C | Samsung | PG58G240NFBUB3RBS rev B | IDT | A1.5 | Foxconn | 2 | 7/27/06 |
| Smart Modular Technologies | SG1287FBD64852NAD5 | NT5TU64M8AE-3C rev A | Nanya | PG58G240NFBUB3RBS rev B | IDT | A1.5 | Foxconn | 2 | 8/1/06 |
| Smart Modular Technologies | SG1287FBD64852-IAI | HYB18T512800AF3S rev A | Qimonda (Infineon) | K0545 na | Intel | D1 | Logitex | 2 | 8/8/06 |
| Nanya | NT1GT72U8PA5BD-3C | NT5U64M8AE-3C | Nanya | | IDT | | | 2 | 8/14/06 |
| Samsung | M395T2953CZ4-CE61 | K4T51083QC | Samsung | | IDT | | | 2 | 8/15/06 |
| Smart Modular Technologies | SG1287FBD64852IAD5 | HYB18T512800AF3S rev A | Qimonda (Infineon) | PG58G240NFBUB3RBS rev B | IDT | A1.5 | Foxconn | 2 | 8/14/06 |
| ATP Electronics | AP28K72S8BHE6S | K4T51083QC-ZCE6 rev C | Samsung | | IDT | A1.5 | Foxconn | 2 | 8/23/06 |
| ATP Electronics | AP28K72S8BHE6S | K4T51083QC-ZCE6 rev C | Samsung | SP240S08K1na | NEC | B52 | Foxconn | 2 | 8/25/06 |
| Kingston | KVR667D2D8F5/1 GI | E5108AG-6E-E rev G | Elpida | 2025286-001.F00 na | Intel | D1 | Foxconn | 2 | 8/29/06 |
| Kingston | KVR667D2D8F5/1 GI | E5108AGBG-6E-E rev G | Elpida | 2025286-002.A00 na | Intel | D1 | Foxconn | 2 | 9/14/06 |

| Fully Buffered ECC, DDR2-677 DIMM Modules 1 GB Sizes (128Mx72) | | | | | | | | | |
|---|------------------------------------|-------------------------|--------------------|------------------------|-------------------|---------------------|-------------------------|-------------|-------------|
| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
| Qimonda (Infineon) | HYS72T128420HF N-3S-A | HYB18T512800AF 5 | Qimonda (Infineon) | | Intel | GB C0 ¹ | | 2 | 9/13/06 |
| Hynix | HYMP512F72BP8D 2-Y5 | HY5PS12821BFP-Y5 | Hynix | | IDT | 1.5 | | 2 | 10/24/06 |
| Wintec Industries | 39C935284C | K4T51083QC-ZCE6 rev C | Samsung | D2F28B rev B | IDT | A1.5 | Foxconn | 2 | 10/12/06 |
| Apacer | 78.0DG99.405 | K4T51083QC-ZCE6 rev C | Samsung | 48.16203.01 5 rev 5 | Intel | D1 | Foxconn | 2 | 10/16/06 |
| Ventura Technology Group | D2-54VD80LIV-555 | EDE-5108AGBG-6E-E rev G | Elpida | D2F28B na | IDT | A1.5 | Foxconn | 2 | 11/11/06 |
| Smart Modular Technologies | SG1287FBD64852-HBD | HY5PS12821BFP-Y5 rev B | Hynix | KS-11 (0634-5) | Intel | D1 | Hynix | 2 | 11/27/06 |
| Smart Modular Technologies | SG1287FBD64852-ECD | E5108AG-6E-E rev G | Elpida | BFA1=AM-1 na | IDT | A1.5 | Elpida | 2 | 11/30/06 |
| Smart Modular Technologies | SG1287FBD64852-SCI | K4T51083QC-ZCE6 rev C | Samsung | M395T2953 CZ0 na | Intel | D1 | Samsung | 2 | 12/3/06 |
| Super Talent Electronics | T667FB1G(Channel I)/S1GTF8AMS(OEM) | K4T51083QC-ZCE6 rev C | Samsung | B62FRCB na | IDT | A1.5 | Foxconn | 2 | 12/6/06 |
| Kingston | KVR667D2D8F5/1 GI | E5108AGBG-6E-E rev G | Elpida | 2025286-002.A00 na | Intel | D1 | Foxconn | 2 | 12/8/06 |
| A-Data Technology | M2OSS5G31BB61L 1C5Z | K4T51083QE-ZCE6 rev E | Samsung | B62FRCB na | NEC | B5 ² | Foxconn | 2 | 12/14/06 |
| SimpleTech | ST72F8T128L-A30GU | K4T51083QC-ZCE6 rev C | Samsung | D2F28B | IDT | A1.5 | Foxconn | 2 | 12/16/06 |
| Viking | VR5EF287218EBW L1 | HYB18T512800BF 3S rev B | Qimonda (Infineon) | D2F28B | IDT | A1.5 | Foxconn | 2 | 12/23/06 |
| Legacy Electronics Inc. | B517K4C90BE-30R | K4T51083QC-ZCE6 rev C | Samsung | D2F28B na | IDT | A1.5 | Foxconn | 2 | 1/6/07 |
| Hynix | HYMP512F72CP8 N3-Y5 | HY5PS12821CFP-Y5 | Hynix | | Intel | GB D1 | FDHS | 2 | 1/16/07 |
| Micron | MT18HTF12872FD Y-667D6E4 | MT47H64M8-3 | Micron | | Intel | GB-D1 | FDHS | 2 | 1/29/07 |
| Dataram | DTM65507C | HY5PS12821CFP-Y5 rev C | Hynix | 40053A rev B | Intel | D1 | Foxconn | 2 | 1/19/07 |
| Legacy Electronics Inc. | B517K4C90BN-30R | K4T51083QC-ZCE6 rev C | Samsung | D2F28B | NEC | B5 ² | AVC | 2 | 1/18/07 |
| Legacy Electronics Inc. | B517K4C90BE-30R | K4T51083QC-ZCE6 rev C | Samsung | D2F28B na | IDT | A1.5 | AVC | 2 | 1/21/07 |
| Legacy Electronics Inc. | N517K4C90BE-30R | E5108AE-6E-E rev E | Elpida | D2F28B na | IDT | A1.5 | AVC | 2 | 1/19/07 |
| S3+ | SG26671GBEI | K4T51083QC-ZCE6 rev C | Samsung | B62FRCB na | IDT | A1.5 | AVC | 2 | 2/1/07 |
| Qimonda | HYS72T128420HF A-3S-B | HYB18T512800AF -3S-B | Qimonda | | Qimonda | C1 | FDHS | 2 | 2/5/07 |
| Qimonda | HYS72T128420HF N-3S-B | HYB18T512800AF -3S-B | Qimonda | | Intel | GB D1 | FDHS | 2 | 2/5/07 |
| Samsung | M395T2953EZ4-CE65 | K4T51083QE | Samsung | | Intel | GB D1 | FDHS | 2 | 2/5/07 |

| Fully Buffered ECC, DDR2-677 DIMM Modules 1 GB Sizes (128Mx72) | | | | | | | | | |
|---|-------------------------|------------------------|-------------|-------------------------|------------|--------------------|------------------|------|---------|
| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
| Micron | MT18HTF12872FDY-667D5E3 | MT47H64M8B6-3 | Micron | | Intel | GB C0 ¹ | FDHS | 2 | 2/13/07 |
| Micron | MT18HTF12872FDY-667B5E3 | MT47H64M8CB-3 | Micron | | Intel | GB C0 ¹ | FDHS | 2 | 2/13/07 |
| Micron | MT9HTF12872FY-667E1N6 | MT47H129M8HQ-3:E | Micron | | NEC | B5+ | FDHS | 1 | 2/26/07 |
| Viking | VR5EF287218EBWL2 | HYB18T512800BF3S rev B | Qimonda | D2F28B | NEC | B5+ | Foxconn | 2 | 2/27/07 |
| Netlist, Inc. | NLC127A26407FD531SC1 | K4T51083QC-ZCE6 rev C | Samsung | 0296-10A rev A | IDT | C1 | Foxconn | 2 | 3/14/07 |
| Smart Modular Technologies | SG1287FBD64852-HB | HY5PS12821CFP-Y5 rev C | Hynix | KS-11 (0646-3F) | IDT | A1.5 | Hynix | 2 | 3/14/07 |
| ATP Electronics | AP28K72S8BHE6S | K4T51083QE-ZCE6 rev E | Samsung | SP240S08K1 na | NEC | B5 ² | Foxconn | 2 | 4/3/07 |
| STEC Inc | INT72W8M128M8M-A03GZU | K4T51083QE-ZCE6 rev E | Samsung | D2F28B | Intel | D1 | AVC | 2 | 4/5/07 |
| Micron | MT9HTF12872FY-667E1E4 | MT47H128M8HQ-3:E | Micron | | Intel | GB D1 | FDHS | 1 | 4/9/07 |
| Micron | MT9HTF12872FY-667E1D4 | MT47H128M8HQ-3:E | Micron | | IDT | C1 | FDHS | 1 | 4/9/07 |
| Smart Modular Technologies | SG1287FBD64852IBD5 | HYB18T512800BF3S rev B | Qimonda | PG58G240NFBUB4RBS rev A | IDT | A1.5 | Foxconn | 2 | 4/07/07 |
| Dataram | DTM65507D | HYB18T512800BF3S rev B | Qimonda | 40053A rev B | Intel | D1 | Foxconn | 2 | 4/12/07 |
| Micron | MT18HTF12872FY-667D6E4 | MT47H128M4 | Micron | | Intel | GB D1 | FDHS | 1 | 5/1/07 |
| Apacer | 75.063AI.G00 | K4T51083QE-ZCE6 rev E | Samsung | 48.16203.095 rev 5 | Intel | D1 | AVC | 2 | 5/16/07 |
| Kingston | KVR667D2D8F5/1GI | NT5TU64M8BE-3C rev B | Nanya | 2025286-002.A00 na | | D1 | Foxconn | | 5/21/07 |
| Wintec Industries | 39C935284E-IL | K4T51083QE-ZCE6 rev E | Samsung | D2F28B rev B | | D1 | Foxconn | | 5/25/07 |
| Micron | MT18HTF12872FDY-667D6D4 | MT47H64M8B6-3:D | Micron | | IDT | C1 | FDHS | 2 | 6/18/07 |
| Micron | MT18HTF12872FY-667D6D4 | MT47H128M4B6-3:D | Micron | | IDT | C1 | FDHS | 1 | 6/18/07 |
| Crucial Technology | CT12872AF667.18FD6D4 | MT47H64M8B6-3:D | Micron | | IDT | C1 | FDHS | 2 | 6/18/07 |
| Crucial Technology | CT12872AF667.18F4D6D4 | MT47H128M4B6-3:D | Micron | | IDT | C1 | FDHS | 1 | 6/18/07 |
| Crucial Technology | CT12872AF667.9FE1E4 | MT47H128M8HQ-3:E | Micron | | Intel | GB D1 | FDHS | 1 | 6/18/07 |
| Crucial Technology | CT12872AF667.18FD6E4 | MT47H64M8B6-3:D | Micron | | Intel | GB D1 | FDHS | 2 | 6/18/07 |
| Crucial Technology | CT12872AF667.18F4D6E4 | MT47H128M4B6-3:D | Micron | | Intel | GB D1 | FDHS | 1 | 6/18/07 |
| Crucial Technology | CT12872AF667.9FE1D4 | MT47H128M8HQ-3:E | Micron | | IDT | C1 | FDHS | 1 | 6/18/07 |
| Crucial Technology | CT12872AF667.9FE1N6 | MT47H128M8HQ-3:E | Micron | | IDT | C1 | FDHS | 1 | 6/18/07 |
| Samsung | M395T2953EZ4-CE66 | K4T51083QE | Samsung | | IDT | C1 | FDHS | 2 | 6/18/07 |

| Fully Buffered ECC, DDR2-677 DIMM Modules 1 GB Sizes (128Mx72) | | | | | | | | | |
|---|---------------------------|---------------------------|--------------------|--------------------------|-------------------|---------------------|-------------------------|-------------|-------------|
| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
| Hynix | HYMP512F72CP8 D3-Y5 | HY5PS12821CFP -Y5 | Hynix | | IDT | C1 | FDHS | 2 | 6/18/07 |
| Qimonda | HYS72T128420HF E-3S-B | HYB18T512800B F | Qimonda | | NEC | B5+ | FDHS | 2 | 6/18/07 |
| Qimonda | HYS72T128520HF D-3S-B | HYB18T512800B F | Qimonda | | IDT | C1 | FDHS | 2 | 6/18/07 |
| Ventura Technology Group | D2-54VD80SIV-555 | K4T51083QE-ZCE6 rev E | Samsung | D2F28B na | IDT | A1.5 | AVC | 2 | 7/15/07 |
| Smart Modular Technologies | SG1287FBD64852-SEI | K4T51083QE-ZCE6 rev E | Samsung | M395T2953E Z0 na | IDT | C1 | Foxconn | 2 | 9/10/07 |
| Avant Technology | AVF7228B52E566 7F0-ELHP | EDE5108AHSE-6E-E rev H | Elpida | 50-1451-01-A rev A | Qimonda | C1 | Foxconn | 2 | 10/01/07 |
| Kingston | KVR667D2D8F5/1 GI | HYB18T512800B F-3S rev B | Qimonda | 2025286-002.A00 na | Intel | D1 | Foxconn | 2 | 10/04/07 |
| Smart Modular Technologies | SG1287FBD64852-SEC1 | K4T51083QE-ZCE6 rev E | Samsung | PG58G240N FBUB4RBS rev A | IDT | C1 | Foxconn | 2 | 10/10/07 |
| Smart Modular Technologies | SG1287FBD64852-IBDC | HYB18T512800B F3S rev B | Qimonda | PG58G240N FBUB4RBS rev A | IDT | C1 | Foxconn | 2 | 10/21/07 |
| Smart Modular Technologies | SG1287FBD64852-IBQ | HYB18T512805B F3S rev B | Qimonda | 240-22-5 na | Qimonda | C1 | Logitex | 2 | 10/26/07 |
| Apacer | 78.0EG99.335 | HYB18T512800B F3S rev B | Qimonda | 48.16203.09 5 rev 5 | Intel | D1 | AVC | 2 | 11/01/07 |
| Hynix | HYMP112F72CP8 D3-Y5 | HY5PS1G831CF P-Y5 | Hynix | | IDT | C1 | FDHS | 1 | 12/28/07 |
| Hynix | HYMP112F72CP8 N3-Y5 | HY5PS1G831CF P-Y5 | Hynix | | Intel | GB D1 | FDHS | 1 | 1/15/08 |
| Samsung | M395T2863QZ4-CE66 | K4T1G084QQ-HCE66 | Samsung | | IDT | C1 | FDHS | 1 | 2/23/08 |
| ATP Electronics | AP28K72S8BHE6 S | K4T51083QE-ZCE6 rev E | Samsung | D2F28B na | NEC | D1 | Foxconn | 2 | 1/11/08 |
| Dataram | DTM65507G | HYB18T512800B 2F3S rev B2 | Qimonda | 40053A rev B | IDT | C1 | Foxconn | 2 | 3/3/08 |
| Aeneon | AET761FB00-30DB19X | HYB18T512800A F-3S-B | Qimonda | | Qimonda | C1 | FDHS | 2 | 3/18/08 |
| STEC | INT72W8W128M8 M-A03GZU | MT47H128M8HQ -3 rev E | Micron | D2F18A rev A | IDT | C1 | AVC | 1 | 4/5/08 |
| Avant Technology | AVF7228B52E566 7F1NYBP-IS | NT5TU64M8BE-25C rev B | Nanya | D2F28B rev B | IDT | C1 | Foxconn | 2 | 5/25/08 |
| Avant Technology | AVF7228B52E566 7F1ELJP-IS | EDE5108AJBG-8E-E rev J | Elpida | D2F28B rev B | IDT | C1 | Foxconn | 2 | 5/26/08 |
| Viking | VR5EF287218FB WL1 | HY5PS1G831CF P-Y5 rev C | Hynix | D2F18A rev A | IDT | L4 | Foxconn | 1 | 06/16/08 |
| Micron | MT9HTF12872FY-667E2D6 | MT47H128M8HQ -3:E | Micron | | IDT | L4 | FDHS | 1 | 6/13/08 |
| Crucial | CT12872AF667.9 E2D6 | MT47H128M8HQ -3:E | Micron | | IDT | L4 | FDHS | 1 | 6/13/08 |
| TRS | TRS32403X | K4T1G084QQ-HCE6 rev Q | Samsung | M395T6553E Z0-P150 rev 4 | IDT | C1 | Samsung | 1 | 07/03/08 |
| TRS | TRS32405X | HYB18T512805B 2F3S rev B2 | Qimonda | 240-22-5G (W0815-7) | Qimonda | C1 | Logitex | 2 | 07/09/08 |
| Qimonda | HYS72T128920EF A-3S-B2 | HYB18T512800B 2F-3S | Qimonda | | Qimonda | C1 | FDHS | 2 | 6/20/08 |

| Fully Buffered ECC, DDR2-677 DIMM Modules 1 GB Sizes (128Mx72) | | | | | | | | | |
|---|--------------------------|--------------------------|--------------------|-------------------------|-------------------|---------------------|-------------------------|-------------|-------------|
| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
| Micron | MT18HTF12872F-DY-667F1D4 | MT47H64M8CF-3:F | Micron | | IDT | C1 | FDHS | 2 | 6/26/08 |
| Crucial | CT12872AF667.18FF1D4 | MT47H64M8CF-3:F | Micron | | IDT | C1 | FDHS | 2 | 6/26/08 |
| Qimonda | HYS72T128420EF-D-3S-B2 | HYB18T512805B2F-3S | Qimonda | | IDT | C1 | FDHS | 2 | 7/13/08 |
| TRS | TRS32400X | HY5PS1G831CF-P-Y5 rev C | Hynix | 0806-2DC | IDT | C1 | Hynix | 1 | 07/22/08 |
| Qimonda | HYS72T128420EF-A-3S-B2 | HYB18T512800B2F-3S | Qimonda | | Qimonda | C1 | FDHS | 2 | 6/20/08 |
| Memphis Electronic AG | DIMDD128M7264-8G-F01EL | EDE5108AJBG-6E-E rev J | Elpida | 001404 | Qimonda | C1 | Logitex | 2 | 10/01/08 |
| Qimonda | HYS72T128501EF-D-3S-C2 | HYB18T1G800C2F-3S-C2 | Qimonda | | IDT | AMB+ | FDHS | 1 | 8/24/08 |
| Qimonda | HYS72T128901EF-A-3S-C2 | HYB18T1G800C2F-3S-C2 | Qimonda | | Qimonda | C1 | FDHS | 1 | 9/22/08 |
| Qimonda | HYS72T128401EF-A-3S-C2 | HYB18T1G800C2F-3S-C2 | Qimonda | | Qimonda | C1 | FDHS | 1 | 9/22/08 |
| Hynix | HYMP112F72CP8-D5-Y5 | HY5PS1G831CF-P-Y5 | Hynix | | IDT | L4 | FDHS | 1 | 11/5/08 |
| Dataram | DTM65526B | HYB18T1G800C2F-3S rev C2 | Qimonda | 40053A rev B | IDT | C1 | Foxconn | 1 | 12/08/08 |
| Smart Modular Technologies | SG1287FB212852-HEDC | H5PS1G83EFR-Y5C rev E | Hynix | PG54G240NFBUB4RAS rev A | IDT | C1 | Foxconn | 1 | 01/20/09 |
| ATP Electronics | AP28K72A8BJE6-S1 | K4T1G084QQ-HCE6 rev Q | Samsung | SP240A08K1na | NEC | D1 | Foxconn | 1 | 02/11/09 |

¹ The GB C0 AMB revision does not support closed-loop throttling.

² This part may show voltage errors in the System Event Log (SEL) during boot. These errors will not affect system operation and can be ignored.

(+) This vendor is part of the CMTL Certification program. This means this part has/will be tested across all compatible Intel Server Boards. For further information contact CMTL @ <http://cmtlabs.com/>

Note: Some memory modules may have thermal issues when used in a non-Intel 1U rack solution. It is advised that you verify any thermal limitations with your chassis supplier before purchasing a chassis.

Note: The use of x4 FBDIMMs will only be supported with the server system operating in "Performance" mode (default). The use of x4 FBDIMMs while the server system is configured to operate in "Acoustics" mode is not supported.

**Intel® Server Boards S5000PSL, S5000XSL, S5000XVN,
and Intel® Storage System SSR212MC2**
Fully Buffered ECC, DDR2-533 DIMM Modules
2 GB Sizes (256Mx72)

| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
|----------------------------|-----------------------------|-------------------------|--------------------|---------------------------|---------------|--------------------|------------------|------|----------|
| Kingston | KVR533D2D4F4 /2GI (INT/INF) | HYB18T512400A F-3.7 | Qimonda (Infineon) | | Intel | QG6400 C0 | FDHS | x4 | 6/13/06 |
| Samsung | M395T5750CZ4-CD51 | K4T51043QC-ZCD5 | Samsung | | IDT | AMB048 0A5RJ A1.5 | | x4 | 6/1/06 |
| ATP Electronics | K4T51043QC-ZCD5 rev C | AP56K72G4BHD 5S | Samsung | | IDT 0480A5 RJ | Y0607D | Foxconn | x4 | 6/22/06 |
| ATP Electronics | AP56K72G4BH D5S | K4T51043QC-ZCD5 rev C | Samsung | SP240G04 K1 na | IDT | A1.5 | Foxconn | 2 | 6/18/06 |
| Smart Modular Technologies | TD2567FBD284 43IAI | HYB18T512400A F37 rev A | Qimonda (Infineon) | PG54G240 NFSUB1R ES rev B | Intel | C0 | Foxconn | 2 | 8/17/06 |
| Smart Modular Technologies | SG2567FBD284 43IAI | HYB18T512400A F37 rev A | Qimonda (Infineon) | PG54G240 NFSUB1R ES rev B | Intel | C0 | Foxconn | 2 | 8/18/06 |
| Smart Modular Technologies | SG2567FBD284 43IAD5 | HYB18T512400A F37 rev A | Qimonda (Infineon) | PG54G240 NFSUB1R ES rev B | IDT | A1.5 | Foxconn | 2 | 9/18/06 |
| Smart Modular Technologies | SG2567FBD284 43SCD5 | K4T51043QC-ZCD5 rev C | Samsung | PG54G240 NFSUB1R ES rev B | IDT | A1.5 | AVC | 2 | 9/19/06 |
| Dataram | DTM65504B | HYB18T512400A F37 rev A | Qimonda (Infineon) | 40060A rev A | Intel | D1 | Foxconn | 2 | 10/2/06 |
| Apacer | 78.ADG9G.401 | K4T51043QC-ZCD5 rev C | Samsung | 48.1A205.0 11 rev 1 | Intel | D1 | Foxconn | 2 | 11/11/06 |
| Ventura Technology Group | D2-56TF82SIV-444 | K4T51043QC-ZCD5 rev C | Samsung | D2F24E na | IDT | A1.5 | AVC | 2 | 12/16/06 |
| Qimonda | HYS72T256420 HFN-3.7-A | HYB18T2G402A F-3.7 | Qimonda | | Intel | GB C0 ¹ | FDHS | 2 | 1/16/07 |
| Qimonda | HYS72T256420 HFN-3.7-B | HYB18T512800B F-3.7-B | Qimonda | | Intel | GB D1 | FDHS | 2 | 1/16/07 |
| Hynix | HYMP525F72C P4N3-C4 | HY5PS12421CF P-C4 | Hynix | | Intel | GB D1 | FDHS | 2 | 2/13/07 |
| Kingston | KVR533D2D4F4 /2GI (INT/ELP) | EDE5104AESK-5C-E | Elpida | | Intel | GB C0 ¹ | FDHS | 2 | 2/13/07 |
| Qimonda | HYS72T256420 HFD-3.7-A | HYB18T512400A F-3.7-A | Infineon | | IDT | 1.5 | FDHS | 2 | 2/13/07 |
| Qimonda | HYS72T256420 HFD-3.7-B | HYB18T512400A F | Qimonda | | IDT | 1.5 | FDHS | 2 | 2/13/07 |
| Samsung | M395T5750CZ4-CD50 | K4T51043QC-CZD5 | Samsung | | Intel | GB C0 ¹ | FDHS | 2 | 2/13/07 |
| Qimonda | HYS72T256420 HFA-3.7-B | HYB18T512400B F-3.7-B | Qimonda | | Qimonda | C1 | FDHS | 2 | 3/12/07 |
| Kingston | KVR533D2D4F4 /2GI | E5104AHSE-6E-E rev H | Elpida | 2025378-001.A00 na | Intel | D1 | Foxconn | 2 | 04/15/07 |
| Kingston | KVR533D2D4F4 /2GI | NT5TU128M4BE-3C rev B | Nanya | 2025378-001.A00 na | Intel | D1 | Foxconn | 2 | 10/22/07 |

| Fully Buffered ECC, DDR2-533 DIMM Modules 2 GB Sizes (256Mx72) | | | | | | | | | |
|---|------------------------------------|-------------------------|--------------------|--------------------------|-------------------|---------------------|-------------------------|-------------|-------------|
| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
| Ventura Technology Group | D2-56TF82SIV-444 | K4T51043QE-ZCE6 rev E | Samsung | D2F24E | IDT | A1.5 | AVC | 2 | 12/04/08 |
| Fully Buffered ECC, DDR2-667 DIMM Modules 2 GB Sizes (256Mx72) | | | | | | | | | |
| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
| Dataram | DTM65522A | HYB18T1G800BF-3.7 rev B | Qimonda | 40053A rev B | IDT | C1 | Foxconn | 2 | 06/17/08 |
| Qimonda (Infineon) | HYS72T256420H FN-3S-A | HYB18T512400AF-3.7 | Qimonda (Infineon) | | Intel | | | 2 | 7/13/06 |
| ATP Electronics | AP56K72G4BHE6S | K4T51043QC-ZCE6 rev C | Samsung | SP240G04K1 na | IDT | A1.5 | Foxconn | 2 | 8/3/06 |
| Smart Modular Technologies | SG2567FBD28452IAD5 | HYB18T512400AF3S rev A | Qimonda (Infineon) | PG54G240NFSUB1RE S rev B | IDT | A1.5 | Foxconn | 2 | 8/3/06 |
| ATP Electronics | AP56K72G4BHE6S | K4T51043QC-ZCE6 rev C | Samsung | SP240G04K1 na | NEC | B5 ² | Foxconn | 2 | 9/1/06 |
| Smart Modular Technologies | SG2567FBD28452IBD5 | HYB18T512400BF-3S rev B | Qimonda (Infineon) | PG54G240NFSUB1RE S rev B | IDT | A1.5 | Foxconn | 2 | 9/18/06 |
| Kingston | KVR667D2D4F5/2GI | HYB18T512400AF3S rev A | Qimonda (Infineon) | 2025372-002.A00 na | Intel | D1 | Foxconn | 2 | 10/23/06 |
| Wintec Industries | 39945344C | K4T51043QC-ZCE6 rev C | Samsung | D2F24E rev E | IDT | A1.5 | Foxconn | 2 | 10/25/06 |
| Dataram | DTM65508A | NT5TU128M4AE-3C rev A | Nanya | 40060A rev A | Intel | D1 | Foxconn | 2 | 10/27/06 |
| Apacer | 78.ADG9H.401 | K4T51043QC-ZCE6 rev C | Samsung | 48.1A205.011 rev 1 | Intel | D1 | Foxconn | 2 | 11/7/06 |
| Kingston | KVR667D2D4F5/2GI | E5104AG-6E-E rev G | Elpida | 2025378-001.A00 na | IDT | A1.5 | Foxconn | 2 | 11/22/06 |
| Smart Modular Technologies | SG2567FBD28452-IAI | HYB18T512400AF3S rev A | Qimonda | 240-25-4 na | IDT | A1.5 | Foxconn | 2 | 11/22/06 |
| Super Talent Electronics | T667FB2G4(Channel)/S2GTF4EM S(OEM) | K4T51043QC-ZCE6 rev C | Samsung | BA2FRCE na | IDT | A1.5 | Foxconn | 2 | 12/4/06 |
| Smart Modular Technologies | SG2567FBD28452-SCD | K4T51043QC-ZCE6 rev C | Samsung | M395T5750-CZ0 na | IDT | A1.5 | Samsung | 2 | 12/8/06 |
| Ventura Technology Group | D2-56VF82SIV-555 | K4T51043QC-ZCE6 rev C | Samsung | D2F24E na | IDT | A1.5 | AVC | 2 | 12/18/06 |
| Viking | VR5EF567214EBWL1 | HYB18T512400BF3S rev B | Qimonda | D2F24E | IDT | A1.5 | Foxconn | 2 | 12/18/06 |
| Kingston | KVR667D2D4F5/2GI | NT5TU128M4AE-3C rev A | Nanya | 2025372-002.A00 na | Intel | D1 | Foxconn | 2 | 1/11/07 |
| Qimonda | HYS72T256420H FD-3S-A | HYB18T512400AF-3S-A | Qimonda | | IDT | 1.5 | HS | 2 | 1/16/07 |
| Kingston | KVR667D2D4F5/2GI (INT/ELP) | E5104AG-6E-E | Elpida | | Intel | D1 | FDHS | 2 | 1/16/07 |
| Qimonda | HYS72T256420H FN-3S-B | HYB18T512400AF-3S-B | Qimonda | | Intel | GB D1 | FDHS | 2 | 1/16/07 |
| Samsung | M395T5750CZ4-CE61 | K4T51043QC | Samsung | | IDT | 1.5 | FDHS | 2 | 1/16/07 |

| Fully Buffered ECC, DDR2-667 DIMM Modules 2 GB Sizes (256Mx72) | | | | | | | | | |
|---|-----------------------------|----------------------------|-----------------------|---------------------------------|-------------------|---------------------|-------------------------|-------------|-------------|
| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
| Qimonda | HYS72T256420H FA-3S-B | HYB18T512400BF -3S-B | Qimonda | | Qimonda | C1 | FDHS | 2 | 1/29/07 |
| Buffalo | D2F667CW- W2GMBJ | MT47H128M4B6-3 rev D | Micron | 2DFE24F- AA na | NEC | B52 | Foxconn | 2 | 1/14/07 |
| Kingston | KVR667D2D4F5/ 2GI | HYB18T512400BF 3S rev B | Qimonda | 2025372- 002.A00 na | Intel | D1 | Foxconn | 2 | 1/28/07 |
| Legacy Electronics Inc. | N527MYG90EN- 30R | EDE5104AG-6E-E rev G | Elpida | D2F24E rev E | NEC | B52 | AVC | 2 | 2/3/07 |
| Legacy Electronics Inc. | B527M4C90EN- 30R | K4T51043QC- ZCE6 rev C | Samsung | D2F24E rev E | NEC | B52 | AVC | 2 | 2/6/07 |
| Qimonda | HYS72T256420H FD-3S-B | HYB18T512400AF | Qimonda | | IDT | 1.5 | FDHS | 2 | 2/5/07 |
| Samsung | M395T5750EZA- CE65 | K4T51043QE | Samsung | | Intel | GB D1 | FDHS | 2 | 2/5/07 |
| Micron | MT36HTF25672F Y-667D1E3 | MT47H128M4B6-3 | Micron | | Intel | GB C0 ¹ | FDHS | 2 | 2/13/07 |
| Qimonda | HYS72T256420H FE-3S-B | HYB18T512400AF -3S-A | Qimonda | | NEC | B5+ | FDHS | 2 | 2/13/07 |
| Wintec Industries | WD2FE02GX818- 667G-HE | MT47H128M8HQ- 3:E rev E | Micron | D2F28B na | Intel | D1 | Foxconn | | 2/16/07 |
| Viking | VR5EF567214EB WL2 | HYB18T512400BF 3S rev B | Qimonda (Infineon) | D2F24E | NEC | B5+ | Foxconn | 2 | 2/23/07 |
| Micron | MT18HTF25672F DY-667E1D4 | MT47H128M8HQ- 3:E | Micron | | IDT | C1 | FDHS | 2 | 2/26/07 |
| Micron | MT18HTF25672F DY-667E1E4 | MT47H128M8HQ- 3:E | Micron | | Intel | GB D1 | FDHS | 2 | 2/26/07 |
| ATP Electronics | AP56K72G4BHE 6S | K4T51043QE- ZCE6 rev E | Samsung | SP240G04K 1 na | NEC | B5 ² | Foxconn | 2 | 4/5/07 |
| Hynix | HYMP525F72BP 4D2-Y5 | HY5PS12421BFP- Y5 | Hynix | | IDT | 1.5 | FDHS | 2 | 4/9/07 |
| Hynix | HYMP525F72CP 4D3-Y5 | HY5PS12421BFP- Y5 | Hynix | | IDT | C1 | FDHS | 2 | 4/9/07 |
| Micron | MT18HTF25672F DY-667E1N6 | MT47H128M8HQ- 3:E | Micron | | NEC | B5+ | FDHS | 2 | 4/9/07 |
| Kingston | KVR667D2D8F5/ 2GI | MT47H128M8HQ- 3 rev E | Micron | 2025286- 002.A00 na | Intel | D1 | Foxconn | 2 | 4/09/07 |
| STEC Inc | INT72W4M256M 8M-A03GZU | HYB18T512400BF 3S rev B | Qimonda | D2F24E na | IDT | A1.5 | AVC | 2 | 4/11/07 |
| Dataram | DTM65508D | HYB18T512400BF 3S rev B | Qimonda | 40060A rev A | Intel | D1 | Foxconn | 2 | 4/20/07 |
| Dataram | DTM65508E | HY5PS12421CFP- Y5 rev C | Hynix | 40060A rev A | INTEL | D1 | Foxconn | 2 | 4/20/07 |
| Kingston | KVR667D2D4F5/ 2GI | HY5PS12421BFP- Y5 rev B | Hynix | 0708-6A | IDT | A1.5 | AVC | 2 | 4/20/07 |
| Micron | MT18HTF25672F Y-667E1E4 | MT47H256M4 | Micron | | Intel | GB D1 | FDHS | 1 | 5/1/07 |
| Micron | MT36HTF25672F Y-667D1E4 | MT47H128M4 | Micron | | Intel | GB D1 | FDHS | 2 | 5/1/07 |
| Smart Modular Technologies | SG2567FBD2845 2IBD5 | HYB18T512400BF 3S rev B | Qimonda | PG54G240 NFSUB1RE S rev C | IDT | A1.5 | Foxconn | 2 | 5/14/07 |
| Apacer | 75.A72AI.G00 | K4T51043QE- ZCE6 rev E | Samsung | 48.1A205.0 11 rev 1 | | D1 | AVC | | 5/23/07 |
| Legacy Electronics Inc. | M527NAE90BE- 30R | MT47H128M8HQ- 3 rev E | Micron | D2F28B rev B | | A1.5 | AVC | | 6/09/07 |

| Fully Buffered ECC, DDR2-667 DIMM Modules 2 GB Sizes (256Mx72) | | | | | | | | | |
|---|------------------------|--------------------------|--------------------|-------------------------|-------------------|---------------------|-------------------------|-------------|-------------|
| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
| Micron | MT18HTF25672FY-667E1D4 | MT47H256M4HQ-3:E | Micron | | IDT | C1 | FDHS | 1 | 6/18/07 |
| Crucial Technology | CT25672AF667.18F4E1D4 | MT47H256M4HQ-3:E | Micron | | IDT | C1 | FDHS | 1 | 6/18/07 |
| Crucial Technology | CT25672AF667.18FE1E4 | MT47H128M8HQ-3:E | Micron | | Intel | GB D1 | FDHS | 2 | 6/18/07 |
| Crucial Technology | CT25672AF667.18F4E1E4 | MT47H256M4HQ-3:E | Micron | | Intel | GB D1 | FDHS | 1 | 6/18/07 |
| Crucial Technology | CT25672AF667.36FD1E4 | MT47H128M4B6-3:D | Micron | | Intel | GB D1 | FDHS | 2 | 6/18/07 |
| Crucial Technology | CT25672AF667.18FE1D4 | MT47H128M8HQ-3:E | Micron | | IDT | C1 | FDHS | 2 | 6/18/07 |
| Crucial Technology | CT25672AF667.18FE1N6 | MT47H128M8HQ-3:E | Micron | | IDT | C1 | FDHS | 2 | 6/18/07 |
| Samsung | M395T5750EZ4-CE66 | K4T51043QE | Samsung | | IDT | C1 | FDHS | 2 | 6/18/07 |
| Micron | MT36HTF25672FY-667D1D4 | MT47H128M4B6-3 | Micron | | IDT | C1 | FDHS | 2 | 7/16/07 |
| Qimonda | HYS72T256920HFA-3S-B | HYB18T512400AF | Qimonda | | Qimonda | C1 | FDHS | 2 | 6/13/07 |
| Buffalo | D2F667CW-2GMEJ | MT47H128M8HQ-3 rev E | Micron | 2DFB28F-AC | IDT | C1 | Foxconn | 2 | 8/22/07 |
| Smart Modular Technologies | SG2567FBD28452IBDC | HYB18T512400BF3S rev B | Qimonda | PG54G240NFSUB1RES rev C | IDT | C1 | Foxconn | 2 | 9/27/07 |
| Kingston | KVR667D2D4F5/2GI | NT5TU128M4BE-3C rev B | Nanya | 2025378-001.A00 na | Intel | D1 | Foxconn | 2 | 10/03/07 |
| Smart Modular Technologies | SG2567FBD28452-IBQ | HYB18T512405BF3S rev B | Qimonda | 0712 (240-25-4) | Qimonda | C1 | Logitex | 2 | 10/19/07 |
| Qimonda | HYS72T256520HFD-3S-B | HYB18T512400BF-3S-B | Qimonda | | IDT | C1 | FDHS | 2 | 11/19/07 |
| Hynix | HYMP125F72CP8N3-Y5 | HY5PS1G831CFP-Y5 | Hynix | | Intel | GB D1 | FDHS | 2 | 12/28/07 |
| Hynix | HYMP125F72CP8D3-Y5 | HY5PS1G831CFP-Y5 | Hynix | | IDT | C1 | FDHS | 2 | 12/28/07 |
| Kingston | KVR667D2D8F5/2GI | E1108ACBG-6E-E rev C | Elpida | 2025286-002.A00 na | Intel | D1 | Foxconn | 2 | 2/13/08 |
| Smart Modular Technologies | SG2567FBD28452-HCD | HY5PS12421C-FP-Y5 rev C | Hynix | 0746-ICC (104B) | IDT | C1 | Hynix | 2 | 2/15/08 |
| Samsung | M395T5663QZ4-CE66 | K4T1G084QQ-HCE66 | Samsung | | IDT | C1 | FDHS | 2 | 2/26/08 |
| ATP Electronics | AP56K72G4BHE6S | K4T51043QE-ZCE6 rev E | Samsung | D2F24E na | NEC | D1 | Foxconn | 2 | 1/18/08 |
| Dataram | DTM65508F | HYB18T512400B2F3S rev B2 | Qimonda | 40084A rev A | IDT | C1 | Foxconn | 2 | 3/1/08 |
| Aeneon | AET861FB00-30DB19X | HYB18T512400AF-3S-B | Qimonda | | Qimonda | C1 | FDHS | 2 | 3/18/08 |
| Smart Modular Technologies | SG2567FB212852HCDL | HY5PS1G831CFP-Y5 rev C | Hynix | PG58G240NFBUB4RBS rev A | IDT | L4 | Foxconn | 2 | 4/4/08 |
| STEC | INT72W4M256M8M-C03GZU | HYB18T512400B2F3S rev B2 | Qimonda | D2F24E rev E | IDT | A1.5 | AVC | 2 | 4/6/08 |
| ATP Electronics | AP56K72S8BJE6S | K4T1G084QQ-HCE6 rev Q | Samsung | D2F28B rev B | NEC | D1 | Foxconn | 2 | 04/14/08 |

| Fully Buffered ECC, DDR2-667 DIMM Modules 2 GB Sizes (256Mx72) | | | | | | | | | |
|---|--------------------------|--------------------------|--------------------|-------------------------|-------------------|---------------------|-------------------------|-------------|-------------|
| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
| Smart Modular Technologies | SG2567FBD12852HCDC | HY5PS1G831CFP-Y5 rev C | Hynix | PG58G240NFBUB4RBS rev A | IDT | C1 | Foxconn | 2 | 04/28/08 |
| Micron | MT18HTF25672FDY-667E1N8 | MT47H128M8HQ-3:E | Micron | | NEC | D1 | FDHS | 2 | 4/26/08 |
| Micron | MT18HTF25672FDY-667E2D6 | MT47H128M8HQ-3:E | Micron | | IDT | L4 | FDHS | 2 | 4/29/08 |
| Crucial | CT25672AF667.18FE1N8 | MT47H128M8HQ-3:E | Micron | | NEC | D1 | FDHS | 2 | 5/21/08 |
| Crucial | CT25672AF667.18FE2D6 | MT47H128M8HQ-3:E | Micron | | IDT | L4 | FDHS | 2 | 5/21/08 |
| Crucial | CT25672AF667.36FD1D4 | MT47H128M4B6-3:D | Micron | | IDT | C1 | FDHS | 2 | 5/21/08 |
| Avant Technology | AVF7256B61E5667F0ELCP-IS | EDE1108ACBG-8E-E rev C | Elpida | 50-1451-01A rev A | IDT | C1 | Foxconn | 2 | 5/31/08 |
| Qimonda | HYS72T256421EFA-3S-C2 | HYB18T1G800C2F-3S | Qimonda | | Qimonda | C1 | FDHS | 2 | 6/11/08 |
| Micron | MT36HTF25672FY-667F1N6 | MT47H128M4CF-3:F | Micron | | NEC | B5+ | FDHS | 2 | 6/7/08 |
| Crucial | CT25672AF667.36FF1N6 | MT47H128M4CF-3:F | Micron | | NEC | B5+ | FDHS | 2 | 6/7/08 |
| STEC | INT72W8W256M8M-A03GZU | K4T1G084QQ-HCE6 rev Q | Samsung | D2F28B rev B | IDT | A1.5 | AVC | 2 | 07/13/08 |
| TRS | TRS32406X | K4T1G084QQ-HCE6 rev Q | Samsung | M395T2953EZ0-P110 rev 4 | IDT | C1 | Samsung | 2 | 07/02/08 |
| TRS | TRS32408X | HYB18T1G800C2F-3S rev C2 | Qimonda | 240-22-5G(W0815-7) | Qimonda | C1 | Logitex | 2 | 07/11/08 |
| Qimonda | HYS72T256920EFA-3S-B2 | HYB18T512405B2F-3S | Qimonda | | Qimonda | C1 | FDHS | 2 | 7/4/2008 |
| Dataram | DTM65521A | HY5PS1G831CFP-Y5 rev C | Hynix | 40053A rev B | IDT | C1 | Foxconn | 2 | 08/01/08 |
| TRS | TRS32401X | HY5PS1G831CFP-Y5 rev C | Hynix | 0821-1DC | IDT | C1 | Hynix | 2 | 07/23/08 |
| Qimonda | HYS72T256521EFD-3S-C2 | HYB18T1G800C2F-3S | Qimonda | | IDT | AMB+ | FDHS | 2 | 7/18/08 |
| Qimonda | HYS72T256921EFA-3S-C2 | HYB18T1G800C2F-3S-C2 | Qimonda | | Qimonda | C1 | FDHS | 2 | 9/18/08 |
| Qimonda | HYS72T256420EFA-3S-B2 | HYB18T512405B2F-3S | Qimonda | | Qimonda | C1 | FDHS | 2 | 2/10/2008 |
| Kingston | KVR667D2D4F5/2GI | HYB15T512400CF25 rev C | Qimonda | 240-35-1 | IDT | C1 | Logitex | 2 | 10/28/08 |
| Hynix | HYMP125F72CP8D5-Y5 | HY5PS1G831CFP-Y5 | Hynix | | IDT | L4 | FDHS | 2 | 11/5/08 |
| Dataram | DTM65521B | HYB18T1G800C2F-3S rev C2 | Qimonda | 40053A rev B | IDT | C1 | Foxconn | 2 | 11/25/08 |
| Ventura Technology Group | D2-56VF82SIV-555 | K4T51043QE-ZCE6 rev E | Samsung | D2F24E | IDT | A1.5 | AVC | 2 | 11/12/08 |

| Fully Buffered ECC, DDR2-667 DIMM Modules 2 GB Sizes (256Mx72) | | | | | | | | | |
|---|--------------------|-------------------------|--------------------|---------------------------|--------------------|---------------------|-------------------------|-------------|-------------|
| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
| Ventura Technology Group | D2-56VF82SIV-555 | K4T51043QG-HCE6 rev G | Samsung | M395T5750E Z0 P081 (0842) | IDT | C1 | Samsung | 2 | 11/21/08 |
| ATP Electronics | AP56K72S8BJE6S7 | K4T1G084QQ-HCE6 rev Q | Samsung | SP240S08K1 | Montage Technology | B2 | Foxconn | 2 | 01/26/09 |
| Smart Modular Technologies | SG2567FB212852HEDC | H5PS1G83EFR-S5C rev E | Hynix | PG58G240N FBUB4RBS rev A | IDT | C1 | Foxconn | 2 | 01/21/09 |
| ATP Electronics | AP56K72S8BJE6S | K4T1G084QE-HCE6 rev E | Samsung | SP240S08K1 | NEC | D1 | Foxconn | 2 | 02/04/09 |
| Dataram | DTM65527B | HY5PS1G431CFP-Y5 rev C | Hynix | 40052A rev B | IDT | C1 | Foxconn | 1 | 02/12/09 |
| Ventura Technology Group | D2-56VF82SIV-555 | K4T51043QE-ZCE6 rev E | Samsung | M395T5750E Z0 P081 | IDT | C1 | Samsung | 2 | 02/16/09 |

¹ The GB C0 AMB revision does not support closed-loop throttling.

² This part may show voltage errors in the System Event Log (SEL) during boot. These errors will not affect system operation and can be ignored.

(+) This vendor is part of the CMTL Certification program. This means this part has/will be tested across all compatible Intel® Server Boards. For further information contact CMTL @ <http://cmtlabs.com/>

Note: Some memory modules may have thermal issues when used in a non-Intel 1U rack solution. It is advised that you verify any thermal limitations with your chassis supplier before purchasing a chassis.

Note: The use of x4 FBDIMMs will only be supported with the server system operating in "Performance" mode (default). The use of x4 FBDIMMs while the server system is configured to operate in "Acoustics" mode is not supported.

Intel® Server Boards S5000PSL, S5000XSL, S5000XVN, and Intel® Storage System SSR212MC2
Fully Buffered ECC, DDR2-533 DIMM Modules
4 GB Sizes (512Mx72)

| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
|--------------|------------------------|------------------------|-------------|-----------------|------------|--------------------|------------------|------|---------|
| Micron | MT36HTS51272FY-53EA2D3 | MT47H512M4THJ-3E | Micron | | IDT 1.5 | AMB0480A5RJ A1.5 | | | 6/15/06 |
| Qimonda | HYS72T512422HFD-3.7-A | HYB18T2G402AF-3.7 | Qimonda | | IDT | 1.5 | FDHS | 2 | 2/13/07 |
| Viking | VR5EF127214FBSL1 | MT47H256M4HQ-37E rev E | Micron | | IDT | A5 | Foxconn | 2 | 2/16/07 |
| Qimonda | HYS72T512422HFN-3.7-A | HYMB18T2G402AF-3.7 | Qimonda | | Intel | GB C0 ¹ | FDHS | 2 | 2/26/07 |
| Samsung | M395T5166AZ4-CD50 | K4T2G264QA | Samsung | | Intel | GB C0 ¹ | FDHS | 2 | 2/26/07 |
| Samsung | M395T5166AZ4-CD51 | K4T2G264QA-ZCD5 | Samsung | | IDT | 1.5 | FDHS | 2 | 3/12/07 |

Fully Buffered ECC, DDR2-667 DIMM Modules
4 GB Sizes (512Mx72)

| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
|----------------------------|----------------------|------------------------|-------------|-------------------------|------------|--------------|------------------|------|----------|
| Crucial Technology | CT51272AF667.36FE1E4 | MT47H256M4HQ-3:E | Micron | | Intel | GB D1 | FDHS | 2 | 6/18/07 |
| Crucial Technology | CT51272AF667.36FE1D4 | MT47H256M4HQ-3:E | Micron | | IDT | C1 | FDHS | 2 | 6/18/07 |
| Crucial Technology | CT51272AF667.36FE1N6 | MT47H256M4HQ-3:E | Micron | | IDT | C1 | FDHS | 2 | 6/18/07 |
| Samsung | M395T5160CZ4-CE66 | K4T1G044QC-ZCE6 | Samsung | | IDT | C1 | FDHS | 2 | 6/18/07 |
| Smart Modular Technologies | SG5127FBD225652MEC | MT47H256M4HQ-3 rev E | Micron | PG54G240NFSUB2RES rev A | IDT | C1 | Foxconn | 2 | 07/23/07 |
| Smart Modular Technologies | SG5127FBD225652-SC | K4T1G044QC-ZCE6 rev C | Samsung | M395T5750EZ0 na | IDT | A1.5 | Samsung | 2 | 8/27/07 |
| Smart Modular Technologies | SG5127FBD225652SCD | K4T1G044QC-ZCE6 rev C | Samsung | M395T5750EZ0 na | IDT | C1 | Samsung | 2 | 8/30/07 |
| ATP Electronics | AP12K72G4BJE6S | K4T1G044QC-ZCE6 rev C | Samsung | D2F24E na | NEC | D1 | Foxconn | 2 | 12/19/07 |
| Dataram | DTM65510C | HY5PS1G431CFP-Y5 rev C | Hynix | 40084A rev A | IDT | C1 | Foxconn | 2 | 1/4/08 |
| Hynix | HYMP151F72CP4N3-Y5 | HY5PS1G831CFP-Y5 | Hynix | | Intel | GB D1 | FDHS | 2 | 1/7/08 |
| Hynix | HYMP151F72CP4D3-Y5 | HY5PS1G831CFP-Y5 | Hynix | | IDT | C1 | FDHS | 2 | 1/7/08 |
| Samsung | M395T5160QZ4-CE66 | K4T1G044QQ-HCE66 | Samsung | | IDT | C1 | FDHS | 2 | 2/20/08 |
| Smart Modular Technologies | SG5127FBD225652HCD | HY5PS1G431CFP-Y5 rev C | Hynix | 0746-4CC rev C | Intel | D1 | Hynix | 2 | 1/14/08 |
| ATP Electronics | AP12K72G4BJE6S | K4T1G044QQ-HCE6 rev Q | Samsung | D2F24E rev E | NEC | D1 | Foxconn | 2 | 3/14/08 |

**Fully Buffered ECC, DDR2-667 DIMM Modules
4 GB Sizes (512Mx72)**

| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
|----------------------------|--------------------------|---------------------------|-------------|--------------------------|------------|--------------|------------------|------|----------|
| Kingston | KVR667D2D4F5/4Gi | E1104ACSE-6E-E rev C | Elpida | 2025378-001.A00 | Intel | D1 | Foxconn | 2 | 4/2/08 |
| Wintec Industries | 39955444Q | K4T1G044QQ-HCE6 rev Q | Samsung | D2F24E rev E | IDT | C1 | Foxconn | 2 | 04/13/08 |
| Micron | MT36HTF51272FY-667E2D6 | MT47H256M4HQ-3:E | Micron | | IDT | L4 | FDHS | 2 | 4/26/08 |
| Micron | MT36HTF51272FY-667E1N8 | MT47H256M4HQ-3:E | Micron | | NEC | D1 | FDHS | 2 | 4/30/08 |
| Crucial | CT51272AF667.36FE2D6 | MT47H256M4HQ-3:E | Micron | | NEC | B5+ | FDHS | 2 | 5/21/08 |
| Crucial | CT51272AF667.36FE1N8 | MT47H256M4HQ-3:E | Micron | | NEC | D1 | FDHS | 2 | 5/21/08 |
| Avant Technology | AVF7251B62E5667F4ELCP-IS | EDE1104ACSE-8E-E rev C | Elpida | BA2FRCU 3.10 rev 3.10 | IDT | C1 | Foxconn | 2 | 5/30/08 |
| Smart Modular Technologies | SG5127FBD12852HCDL | HY5PS1G831CFP-Y5 rev C | Hynix | PG54G240 NFBUBGA1 rev A | IDT | L4 | Foxconn | 4 | 07/10/08 |
| TRS | TRS32402X | HYB18T1G405C2 F-3S rev C2 | Qimonda | 240-36-1G (S0750) | Qimonda | C1 | Logitex | 2 | 07/08/08 |
| Viking | VR5EF127218FBWL1 | HY5PS1G831CFP-Y5 rev C | Hynix | D2F48W | IDT | L4 | Foxconn | 4 | 07/12/08 |
| Qimonda | HYS72T512920EFA-3S-C2 | HYB18T1G400C2 F-3S | Qimonda | | Qimonda | C1 | FDHS | 2 | 6/18/08 |
| TRS | TRS32404X | HY5PS1G431CFP-Y5 rev C | Hynix | 0815-3EC na | IDT | C1 | Hynix | 2 | 07/24/08 |
| Netlist, Inc. | NMD517A21207FD53I5HC | HY5PS1G831CFP-Y5 rev C | Hynix | 0367-10 rev A | IDT | L4 | Netlist | 4 | 6/20/08 |
| Smart Modular Technologies | SG5127FB212852HCDM | HY5PS1G831CFP-Y5 rev C | Hynix | D2F48W | IDT | L4 | Foxconn | 4 | 8/14/08 |
| ATP Electronics | AP12K72F8BJE6S1 | K4T1G084QQ-HCE6 rev Q | Samsung | BA2FRCG | NEC | D1 | Foxconn | 4 | 09/23/08 |
| Dataram | DTM65526A | HY5PS1G831CFP-Y5 rev C | Hynix | 40053A rev B | IDT | C1 | Foxconn | 1 | 09/23/08 |
| Qimonda | HYS72T512420EFA-3S-C2 | HYB18T1G800C2 F-3S-C2 | Qimonda | | Qimonda | C1 | FDHS | 2 | 10/2/08 |
| Dataram | DTM65523A | HY5PS1G831CFP-Y5 rev C | Hynix | 40099A rev A | IDT | L4 | Foxconn | 2 | 10/03/08 |
| Smart Modular Technologies | SG647FB264852QB2L | B2 | Qimonda | PG54G240 NFBUB4RAS rev A | IDT | L4 | Foxconn | 1 | 10/15/08 |
| Hynix | HYMP151F72CP4D5-Y5 | HY5PS1G431CFP-Y5 | Hynix | | IDT | L4 | FDHS | 2 | 11/5/08 |
| Dataram | DTM65523B | HYB18T1G800C2 F-3S rev C2 | Qimonda | 40099A rev A | IDT | L4 | Foxconn | 4 | 11/26/08 |
| Wintec Industries | 39955383C | HY5PS1G831CFP-Y5 rev C | Hynix | D2F48W | IDT | L4 | Foxconn | 4 | 12/10/08 |

**Fully Buffered ECC, DDR2-667 DIMM Modules
4 GB Sizes (512Mx72)**

| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
|-------------------------|---------------------------|---------------------------|-------------|--|-----------------------|--------------|------------------|------|----------|
| Qimonda | HYS72T512520E FD-3S-C2 | HYB18T1G400C2 F-3S-C2 | Qimonda | IDT | L4 | FDHS | Qimonda | 2 | 10/02/08 |
| ATP Electronics | AP12K72G4BJE6 S7 | K4T1G044QQ- HCE6 rev Q | Samsung | D2F24E | Montage Technology | B2 | Foxconn | 2 | 01/27/09 |
| Legacy Electronics Inc. | B547RYC9BEP- 30R | K4T1G044QQ- HCE6 rev Q | Samsung | LE36D2FG 34FRE rev B (5107 Raw Card E) | IDT | C1 | AVC | 2 | 01/12/09 |
| ATP Electronics | AP12N72G4BJE6 S0 | K4T1G044QQ- HYE6 rev Q | Samsung | M395T5750 EZ0 | IDT | C1 | Samsung | 2 | 02/02/09 |

¹ The GB C0 AMB revision does not support closed-loop throttling.

² This part may show voltage errors in the System Event Log (SEL) during boot. These errors will not affect system operation and can be ignored.

Intel® Server Board S5000PAL

**Fully Buffered ECC, DDR2-667 DIMM Modules
8 GB Sizes (1G x72)**

| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | AMB Vendor | AMB Revision | Heat-sink Vendor | Rank | Date |
|----------------------------|-----------------------|---------------------------|-------------|----------------------|------------|--------------|------------------|------|----------|
| Smart Modular Technologies | SG1027FB251252 -SA | K4T4G264QA- HCE6 rev A | Samsung | M395T5166 AZ0-PO8 | IDT | C1 | Samsung | 2 | 10/28/08 |

(+) This vendor is part of the CMTL Certification program. This means this part has/will be tested across all compatible Intel Server Boards. For further information contact CMTL @ <http://cmtlabs.com/>

Note: Some memory modules may have thermal issues when used in a non-Intel 1U rack solution. It is advised that you verify any thermal limitations with your chassis supplier before purchasing a chassis.

Note: The use of x4 FBDIMMs will only be supported with the server system operating in "Performance" mode (default). The use of x4 FBDIMMs while the server system is configured to operate in "Acoustics" mode is not supported.

4. Intel® Server Board S5000PSLROMB RAID Controller Tested Memory

The following table's list DIMM devices tested to be compatible with the RAID subsystem of the Intel® Server Board S5000PSLROMB. The list of tested memory is periodically updated as qualified memory is added during the production life of the Intel product.

Intel requires the use of ECC Registered DDR2 memory in the Intel® Server Board S5000PSLROMB RAID Controller and Intel® RAID Controller SROMBSAS18E.

Memory modules not listed in the following tables have not been tested for compatibility and their use with the RAID subsystem of the Intel® Server Board S5000PSLROMB may result in unpredictable operation and data loss.

Supported memory sizes: 256MB and 512MB sizes only

Caution: Third party memory vendors may use the same module part number with different DRAM vendors and die revisions. To insure proper system operation, verify that each DRAM vendor and die revision has been separately tested and qualified. Please notify CMTL if there is a discrepancy. This list is subject to change without notice.

Note: This list is not intended to be all-inclusive. It is provided as a convenience to Intel's general customer base, but Intel does not make any representations or warranties whatsoever regarding the quality, reliability, functionality, or compatibility of these memory modules.

| Intel® Server Board S5000PSLROMB RAID Controller Registered ECC DDR2 DIMM Modules 256 MB Sizes (32Mx72) | | | | | | |
|--|---------------------|------------------|-------------|-----------------|----------|-------|
| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | Date | Speed |
| Micron | MT9HTF3272Y-40EB2 | | Micron | | 8/22/06 | 400 |
| Qimonda | HYS72T32000HR-5-A | | Qimonda) | | 8/22/06 | 400 |
| Samsung | M393T3253FG0-CCC | | Samsung | | 8/22/06 | 400 |
| Samsung | M393T3253FZ0-CCC | | Samsung | | 8/22/06 | 400 |
| Samsung | M393T3253FZ3-CCC | | Samsung | | 8/22/06 | 400 |
| Micron | MT9HTF3272Y-53EB2 | | | | 6/21/07 | 533 |
| Registered ECC DDR2 DIMM Modules 512 MB Sizes (64Mx72) | | | | | | |
| Manufacturer | Part Number | DRAM Part Number | DRAM Vendor | PCB Part Number | Date | Speed |
| Hynix | HYMP564R72P8-E3 | | Hynix | | 8/22/06 | 400 |
| Qimonda | HYS72T64000HR-5-A | | Qimonda | | 8/22/06 | 400 |
| Samsung | M393T6553BZ0-CCC | | Samsung | | 8/22/06 | 400 |
| Samsung | M393T6553CZ0-CCC | | Samsung | | 8/22/06 | 400 |
| Samsung | M393T6553CZ3-CCC | | Samsung | | 8/22/06 | 400 |
| Micron | MT9HTF6472Y-40EB2 | | Micron | | 8/22/06 | 400 |
| Micron | MT9HTF6472Y-53ED4 | | | | 6/21/07 | 533 |
| Qimonda | HYS72T64000HR-3.7-B | | | | 6/21/07 | 533 |
| Qimonda | HYS72T64000HR-5-B | | Qimonda | | 12/10/07 | 400 |
| Micron | MT9HTF6472PY-667D2 | | Micron | | 12/10/07 | 667 |

(+) This vendor is part of the CMTL Certification program. This means this part has/will be tested across all compatible Intel Server Boards. For further information contact CMTL @ <http://cmtlabs.com/>

Caution: Some modules on this list may contain “stacked” DRAM parts. These parts may have thermal & physical limitations in some chassis configurations. It is advised to verify that your chassis configuration will support “stacked” parts before purchase.

Verify that the DRAM part number matches the DRAM on this list before purchasing.

5. Sales Information

| Vendor Name | Web URL | Vendor Direct Sales Info |
|--------------------------------|---|---|
| ATP Electronics | http://www.atpinc.com/ | Tel (1) 408-732-5000, ext 5858 Fax 408-732-5893 sales@atpusa.com |
| ATP Electronics -- Taiwan Inc. | http://www.atpinc.com/ | Tel 011-886-2-2659-6368 Fax 886-2-2659-4982 |
| Avant Technology | http://www.avanttechnology.com | Brad Scoggins Phone: (512)491-7411 Fax: (512)491-7412 brads@avanttechnology.com |
| Aved Memory Products | http://www.avedmemory.com/ | |
| Buffalo Technology | http://www.buffalotech.com/ | (800) 967-0959 memory@buffalotech.com |
| Centon Electronics | http://www.centon.com | Tel: 949-855-9111 Fax: 949-855-6035 |
| Corsair | http://www.corsairmicro.com/ | Tel: 510-657-8747 Fax: 510-657-8748 |
| Crucial | http://www.crucial.com/intel | Toll-free: 888-363-4167 (US & Canada only) Tel: 208-363-5790 Fax: 208-363-5560 crucial.sales@micron.com |
| Dane-Elec | http://www.dane-memory.com/ | Michal Hassan @ (949)450-2941 or email @ Michal@Dane-memory.com |
| Dataram | http://www.dataram.com/ | Paul Henke, 800-328-2726 x2239 in USA 609-799-0071 phenke@dataram.com |
| GoldenRAM | http://www.goldenram.com | Jason M. Barrette @ 800-222-861 x7546 jasonb@goldenram.com or Michael E. Meyer @800-222-8861 x7512 michaelm@goldenram.com |
| Hitachi | http://semiconductor.hitachi.com/pointer/ | |
| Hyundai/Hynix Semiconductor | http://www.hea.com/ | |
| Qimonda (Infineon) | http://www.Qimonda(Infineon).com/business/distribut/index.htm | |
| ITAUCOM | http://www.itaucom.com.br | |
| JITCO CO LTD | http://www.jitco.net/ | Seong Jeon Tel: 82-32-817-9740 s.jeon@jitco.net |
| Kingston | http://www.kingston.com | US.- Call (877) 435-8726 Asia – Call 886-3-564-1539 Europe – Call +44-1932-755205 |
| Legacy Electronics Inc. | http://www.legacyelectronics.com | U.S. Contact: Gary Ridenour, 949-498-9600, Ext 350 European Contact: 49 89 370 664 11 |
| Legend | http://www.legend.com.au | |
| Micron | http://www.micron.com | |
| MSC Vertriebs GmbH | http://www.msc-ge.com | Andreas Gruendl Tel: +49-89-945532-34 Fax: +44-89-945532-41 agru@msc-ge.com |
| Nanya Technology | http://www.ntc.com.tw | Winson Shao 886-3-328-1688, Ext 6018 winsonshao@ntc.com.tw |

| Vendor Name | Web URL | Vendor Direct Sales Info |
|----------------------------|--|---|
| Netlist, Inc | http://www.netlistinc.com | Christopher Lopes 949.435.0025 tel 949.435.0031 fax sales@netlistinc.com |
| Peripheral Enhancements | http://www.peripheral.com/ | |
| Samsung | http://www.korea.samsungsemi.com/locate/buy/list_na.html | For US customers go to: http://www.mymemorystore.com/ |
| Silicon Tech | http://www.silicontech.com/contact/salescontacts.shtml | |
| Simple Tech | http://www.simpletech.com | Ron Darwish @ (949) 260-8230 or email @ Rdarwish@Simpletech.com |
| SMART Modular Technologies | www.smartm.com/channel/hpc/ | Gene Patino (949) 439-6167 Gene.Patino@Smartm.com |
| Super Talent Electronics | http://www.supertalentmemory.com | David Crume (408) 957-8181 support@supertalentmemory.com |
| Swissbit | http://www.swissbit.com | Tony Cerreta Tel: 914-935-1400 x240 Fax: 914-935-9865 tony.cerreta@swissbitna.com |
| TechnoLinc Corporation | http://www.technolinc.com | David Curtis 510-445-7400 davidc@technolinc.com |
| TRS* Tele-Radio-Space GmbH | http://www.certified-memory.com http://www.certified-memory.de | Vender Direct Sales Info: Andreas Gruendl Tel: +49.89.945532-34 Fax: +49.89.945532-41 Andreas.gruendl@trs-eu.com |
| Unigen | http://www.unigen.com | |
| Ventura Technology Inc | http://www.venturatech.com | Sam Lewis 760 724-8700 ext. 103 |
| Viking InterWorks | http://www.vikinginterworks.com | Adrian Proctor Tel: 949-643-7255 adrian.proctor@sanmina-sci.com |
| Virtium Technology Inc | http://www.virtium.com | Tod Skelton @ (949) 460-0020 ext. 146 or email @ tod.skelton@virtium.com |
| Wintec Industries | http://www.wintecindustries.com | Tel 510-360-6300 Fax 510-770-9338 |

6. CMTL* (Computer Memory Test Labs)

CMTL is a privately owned and operated memory testing organization responsible for testing a broad range of memory products. Memory devices tested by CMTL must undergo a rigorous battery of tests to ensure that the product will perform the intended server functions. Memory capability is a major factor your customers consider. CMTL has the ability to test and certify memory on Intel-based server platforms. The list of memory modules, which have undergone testing through the CMTL facility, should be referenced when considering modules for integration into this Intel server product. Stringent standards with regard to manufacturing procedures and quality must be met to pass the exacting tests required for qualification through the independent testing facility. Testing is performed by CMTL with Intel server products and test procedures defined by Intel's Memory Qualification Lab. Intel routinely audits the CMTL facility to ensure all procedures, process handling, and testing methodologies are met.

IMPORTANT NOTE

DIMM devices with gold contacts should NOT be placed into DIMM sockets with tin-lead contacts or vice-versa. Mixing dissimilar metal contact types has been shown to result in unreliable memory operation. Intel recommends similar manufacturer and similar speeds in each Rank on the memory module. Mixing of dissimilar memory manufacturer devices or dissimilar memory device speeds is not recommended. This document contains information which is the proprietary property of Intel Corporation. Nothing in this document constitutes a guaranty, warranty, or license, express or implied. Intel has tested the following DIMMs for minimum electrical and functional compatibility with the Intel® Server Board. This listing is not intended to be all inclusive; it only represents the DIMMs Intel or CMTL has tested. Users of this list are reminded to check with the DIMM manufacturer or Distributor to ensure that a particular DIMM model is adequate for the intended purpose of the Intel® Server Board. Intel provides no indemnities for and expressly disclaims all liabilities for any and all such guaranties, representations, and warranties (oral or written) whether express or implied, related to DIMMs in a Intel® Server Board product, including without limitation to: fitness for a particular purpose; merchantability; noninfringement of intellectual property or other rights of any third party or of Intel. The reader is advised that third parties may have intellectual property rights which may be relevant to this document and the technologies discussed herein, and is advised to seek the advice of competent legal counsel, without obligation of Intel. Intel retains the right to make changes to this document at any time, without notice. Intel makes no warranty or representation with respect to the use of this document or reliance by the reader upon its contents, and assumes no responsibility for any errors which may appear in the document nor does it make a commitment to update the information contained herein.

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