

Intel[®] Server Compute Blade SBXD62 Memory List Test Report Summary



*Revision 1.1
May, 2006*

Revision History		
Date	Rev	Modifications
April 2006	1.0	Initial Release
May 2006	1.1	Corrected Typographical Error

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The Intel® Server Compute Blade SBXD62 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 bank on the memory module. Mixing of dissimilar memory manufacturer and similar speeds in each bank on the memory module is NOT recommended

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Overview of Memory Testing

The following procedure is used to test memory modules for use in the Intel® Server Compute Blade SBXD62. Memory is a vital subsystem in a platform. Intel Corporation requires strict guidelines to be met before a memory vendor and part is put onto the qualified memory list. Each Intel Server Blade product has a separate qualified memory list.

Memory qualification for Intel's Server Board products is performed by Intel's Memory Validation Laboratory (MVL), and by an independent external test laboratory, Computer Memory Test Lab (CMTL)¹. CMTL is a leading memory testing organization responsible for testing a broad range of memory products. Memory devices tested by Intel's MVL or CMTL must undergo rigorous tests to ensure that the product will perform the intended server functions.

Intel® Server and Workstation board qualified memory lists categorize memory modules as Advanced Tested. The Advanced Testing process involves a paper qualification, a standard voltage and room temperature functional test, and a voltage and temperature margin functional test. A paper qualification is a review of critical timings, electrical characteristics, timing requirements, environmental requirements, and packaging requirements in order to see if the memory meets Intel's memory specifications. The standard voltage and room temperature test involves testing the memory module on the particular Intel Server Blade for which it is being qualified with test software operating under Microsoft* Windows* Server 2003 Enterprise Edition for no less than 24 hours. The voltage and temperature margin testing involves testing the memory module on the particular Intel Server Blade for which it is being qualified with various test software and operating systems for 48-72 hours under various voltage and temperature margin conditions. Memory modules that have completed Advanced Testing are known to be compatible with the product on which they were tested, and with the test software and operating system that was utilized during the test procedure.

For information regarding the testing procedure required to reach each phase, please contact your Intel Representative.

¹ CMTL is an independent memory testing organization responsible for testing a broad range of memory products. Receiving a "PASS" after being tested by CMTL, means that a product functions correctly and consumers can use it 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 equipment and a procedure as defined by Intel's various functional testing levels. CMTL contact:

John Deters	Computer Memory Test Lab (CMTL)
949-716-8690 (voice)	24 Hammond Suite F
949-716-8691 (fax)	Irvine, CA 92618
	http://www.cmtlabs.com/

Qualified Memory for the Intel® Server Compute Blade SBXD62

The memory module on the server Blade SBXD62 has 4 DIMM sockets, which can hold up to 16 GB of Registered ECC DDR2-400 memory using four 72-bit DIMM modules. The following memory features are supported:

- DDR2-400 (PC3200) Registered ECC in compliance with the standard DDR JEDEC DIMM Specification
- DIMMs with capacity of 256MB, 512 MB, 1G, 2G and 4G. Other DRAM sizes may function correctly but will not be validated
- Minimum configuration is 512MB using two 256MB DIMMs
- Maximum Configuration is 16GB using four 4GB DIMMs
- Memory DIMMs are populated in sets of two identical DIMMS. Install the DIMMs in the following order:

Pair	DIMM Connectors
First	1 (J113) and 2 (J111)
Second	3 (J112) and 4 (J110)

- Refer to the Intel® Server Compute Blade SBXD62 Installation and User's Guide for specifics of memory configuration and population rules

Below is a chart that lists the current supported memory types:

DDR2-400 Registered DRAM Module Configurations for CAS Latency 3, 4, & 5						
DIMM Capacity	DIMM Organization	SDRAM Density	SDRAM Organization	#SDRAM Devices/rows/Banks	# Address Bits Rows/Banks/Column	Rank Type
256MB	32M x 72	256Mbit	32M x 8	9/1/4	13/2/10	Single
512MB	64M x 72	256Mbit	64M x 4	18/1/4	13/2/11	Single
512MB	64M x 72	256Mbit	32M x 8	18/2/4	13/2/10	Double
512MB	64M x 72	512Mbit	64M x 8	9/1/4	14/2/10	Single
1GB	128M x 72	512Mbit	128M x 4	18/1/4	14/2/11	Single
1GB	128M x 72	512Mbit	64M x 8	18/2/4	14/2/10	Double
1GB	128M x 72	1Gbit	128M x 8	9/1/8	14/3/10	Single
2GB	256M x 72	1Gbit	256M x 4	18/1/8	14/3/11	Single
2GB	256M x 72	1Gbit	128M x 8	18/2/8	14/3/10	Double
2GB	256M x 72	2Gbit	256M x 8	9/1/8	15/3/10	Single
4GB	512M x 72	2Gbit	256M x 8	18/2/8	15/3/10	Double
4GB	512M x 72	2Gbit	512M x 4	18/1/8	15/3/11	Single
4GB	512M x 72	4Gbit	512M x 8	9/1/8	TBD	Single

The following table lists DIMM devices known to be compatible with the Intel® Server Compute Blade SBXD62. Intel recommends that Advanced Tested DIMMs be used to establish reliable system operation. DIMM devices not listed can be used; but, in the event of unreliable system operation, the DIMM devices should be replaced with functionally Advanced Tested DIMMs to determine whether the DIMM devices are causing the problem.

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.

Note: This list is not intended 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.

This list is subject to change without notice.

Intel® Server Compute Blade SBXD62									
Registered, ECC, DDR2-400 DIMM Modules									
512MB Sizes (64Mx72)									
Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
Infineon	HYS72T64001HR-5-A	HYB18T256400AF-5	Infineon		4/06	3	Yes	(64Mx4)*18	
Micron	MT18HTF6472Y-40EB2		Micron		4/06	3	Yes	(64Mx4)*18	
Samsung	M393T6450FZ3-CCC	K4T56043QF-ZCCC000	Samsung		4/06	3	Yes	(64Mx4)*18	
Registered, ECC, DDR2-400 DIMM Modules									
1GB Sizes (128Mx72)									
Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
Infineon	HYS72T128000HR-5-A	HYB18T256400AF-5	Infineon		4/06	3	Yes	(128Mx4)*18	
Micron	MT18HTF12872Y-40EB3		Micron		4/06	3	Yes	(128Mx4)*18	
Samsung	M393T2950CZ3-CCC	K4T51043QB-ZCCC000	Samsung		4/06	3	Yes	(128Mx4)*18	
Registered, ECC, DDR2-400 DIMM Modules									
2GB Sizes (256Mx72)									
Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
Infineon	HYS72T256220HR-5-A	HYB18T512400AF-5	Infineon		4/06	3	Yes	(128Mx4)*36	
Samsung	M393T5750CZ3-CCC	K4T51043QC-ZCCC000	Samsung		4/06	3	Yes	(128Mx4)*36	
Registered, ECC, DDR2-400 DIMM Modules									
4GB Sizes (512Mx72)									
Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL

Modules shaded in light blue are lead free.

(+) This vendor is part of the CMTL Certification program. This means this part has/will been tested across all compatible Intel Server Blades. 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.

Sales Information

Vendor Name	Web URL	Vendor Direct Sales Info
ATP Electronics	http://www.atpusa.com/	Florence Hsieh Tel 408-732-5831 Fax 408-732-5055 sales@atpusa.com
ATP Electronics -- Taiwan Inc.	http://www.atpusa.com/	Patty Kuo 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
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 phenke@dataram.com Peter Jauss, +49-69-680-9070 in EMEA pjauss@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.heacom.com/	
Infineon	http://www.infineon.com/business/distribut/index.htm	
ITAUCOM	http://www.itauc.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: Keri Albers 888 466 3853 ext. 307 European Contact: 49 89 370 664 11
Legend	http://www.legend.com.au	
Micron	http://silicon.micron.com/mktg/http://silicon.micron.com/mktg/mbqual/qual_data.cfm	
MSC Vertriebs GmbH	http://www.msc-ge.com	William Perrigo 49-7249-910-417 Fax: 49-7249-910-229 wpe@msc-ge.com
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/	
PNY	http://www.pny.com/internet_explorer/LP_B.HTML	

Vendor Name	Web URL	Vendor Direct Sales Info
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	http://www.smartm.com	Leo Alafriz 949-753-0116 ext. 125 leo.alafriz@smartm.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	Vendor Direct Sales Info: Andreas Gründl, Pho.: +49(0)89/94553234, Fax.: +49(0)89/94553293, agruendl@trs-space.de
Unigen	http://www.unigen.com	
Ventura Technology Inc	http://www.venturatech.com	Don Hummel @ 805-581-0800 x 108 or email @ don@venturatech.com
Viking InterWorks	http://www.vikinginterworks.com	
Virtium Technology Inc	http://www.virtium.com	Tod Skelton @ (949) 460-0020 ext. 146 or email @ tod.skelton@virtium.com
Legend	http://www.legend.com.au	Tel: 800-338-2361 Fax: 949-459-8577 orderdesk@vikingcomponents.com
Wintec Industries	http://www.wintecindustries.com	Tel 510-360-6300 Fax 510-770-9338

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 Validation 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 bank 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 boxed processors. 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 on the boxed processor baseBlade. 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 Blade 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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