

Intel[®] STL2 Server Board Memory List Test Report Summary



*Revision 10.0
February 2001*

Revision History		
Date	Rev	Modifications
Sept/00	0.5	Initial post-launch release for review.
Sept/00	1.0	Release
Oct/00	2.0	Added Dataram 128MB part. Added Silicon Tech & Simple Tech 256MB parts. Added Viking & ATP Electronics 512MB parts. (In shaded area).
Oct/00	3.0	Added Hyundai, Micron & Samsung 128MB parts. Added ATP Electronics, Kentron & Samsung 256MB parts. (In shaded area).
Nov/00	4.0	Added Dataram 256MB & 512MB parts. Added Viking, Corsair and Kingston 256MB parts. Added Dan-Elec, ATP, Silicon Tech, Simple Tech & Infineon 128MB parts. Added Legacy Elec. 1GB part. Made correction on Hyundai 128MB part. Added Distributor information. (In shaded area).
Nov/00	5.0	Added Kingston 128MB part. (In shaded area).
Dec/00	6.0	Part number correction for Legacy Elec. Removed Infineon 1G part. Added Corsair 256MB part. Added Dataram 128MB part. (In shaded area).
Dec/00	7.0	Added Micron & Dane-Elec 64MB parts. Added Samsung & ATP Electronics 128MB parts. Added Dataram, ATP Electronics & Legacy Electronics 256MB parts. Added Dane-Elec, ATP Electronics & Corsair 512MB parts. Added Samsung 1G part. (In shaded area).
Jan/01	8.0	Added Samsung, ATP Electronics & Viking 256MB parts. Added ATP Electronics & Aved Memory Products 128MB parts. Added ATP Electronics 512 & 1G parts. (In shaded area).
Jan/01	9.0	Added Viking 128MB part. Added Silicon Tech & Simple Tech 256MB parts. Added Virtium Technology Inc., Kingston GolenRAM, Simple Tech, Silicon Tech, Unigen, Aved Memory Products, Dataram & Corsair 512MB parts. Added 2 nd part number for Viking 256MB part. (In shaded area).
Feb/01	9.0	Added Dane-Elec, Micron & Samsung 128MB part. Added Aved Memory Products, & Infineon 256MB part. Added Dataram 512MB part. (In shaded area).

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The hardware vendor remains solely responsible for the design, sale and functionality of its product, including any liability arising from product infringement or product warranty. Only approved software drivers and accessories that are recommended for the revision number of the boards and system being operated should be used with Intel products. Please note that, as a result of warranty repairs or replacements, alternate software and firmware versions may be required for proper operation of the equipment.

The STL2 Server Board 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® STL2 Server Board. 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 Board 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®'s 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® board for which it is being qualified with test software operating under Microsoft* Windows*2000 Advanced Server for no less than 24 hours. The voltage and temperature margin testing involves testing the memory module on the particular Intel board 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 a leading 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)
714-960-1243 (voice)	101 Main Street, Suite 2G
714-960-4695 (fax)	Huntington Beach, CA 92648
	http://www.cmtlabs.com

Qualified Memory for the STL2 Server Board

The memory module on the STL2 server board has 4 DIMM sockets, which can hold up to 4 GB of Registered ECC PC133 memory using four 72 bit DIMM modules. The following memory features are supported:

- 133 MHz, Registered ECC PC-133 compatible 3.3V registered SDRAM modules (in compliance with the PC-133 Registered DIMM Specification)
- DIMMs with capacity of 64MB, 128MB, 256 MB, 512 MB and 1G. Other DRAM sizes may function correctly but will not be validated.
- Minimum configuration is 64MB using one 64MB DIMM.

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

PC-133 Registered SDRAM Module Configurations for Cas Latency 2 & 3					
DIMM Capacity	DIMM Organization	SDRAM Density	SDRAM Organization	# SDRAM Devices/rows/Banks	# Address bits rows/Banks/column
64MB	8M x 72	64Mbit	8M x 8	9/1/4	12/2/9
128MB	16M x 72	64Mbit	16M x 4	18/1/4	12/2/10
128MB	16M x 72	64Mbit	8M x 8	18/2/4	12/2/10
128MB	16M x 72	128Mbit	16M x 8	9/1/4	12/2/10
256MB	32M x 72	64Mbit	16M x 4	36/2/4	12/2/10
256MB	32M x 72	128Mbit	32M x 4	18/1/4	12/2/11
256MB	32M x 72	128Mbit	16M x 8	18/2/4	12/2/10
256MB	32M x 72	256Mbit	64M x 4	9/1/4	13/2/11
256MB	32M x 72	256Mbit	32M x 8	9/1/4	13/2/10
512MB	64M x 72	128Mbit	32M x 4	36/2/4	12/2/11
512MB	64M x 72	256Mbit	64M x 4	18/1/4	13/2/11
512MB	64M x 72	256Mbit	32M x 8	18/2/4	13/2/10
1GB	128M x 72	256Mbit	64M x 4	36/2/4	13/2/11

Memory features are detailed in *the STL2 Server Board Technical Product Specification* available on-line at <http://support.intel.com/support/motherboards/server/STL2/>

The following table lists DIMM devices known to be compatible with the Intel STL2 Server Board. 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.

STL2 Server Board

**Registered, ECC, 133MHz SDRAM DIMM Modules
64MB Sizes (8Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	CAS Latency	Low Profile	EOL
Hyundai	HYM7V73AC801BTHG-75				9/21/00		3		
Samsung	M390S0823DT1-C75				9/12/00		3		
Micron	MT9LSDT872G-133C3				10/30/00		3		
*Dane-Elec	DP133R072083A	NT56V6610C0T-75	Nanya	16-25600B rev B	12/09/00	B767			

* For further information contact CMTL at www.GOLD@cmtlabs.com

STL2 Server Board

Registered, ECC, 133MHz SDRAM DIMM Modules 128MB Sizes (16Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	CAS Latency	Low Profile	EOL
Hitachi	HB52F169E1-75F				9/21/00		3		
Hyundai	HYM7V73AC1601BTNG-75				9/21/00		3		
Samsung	M390S1620DT1-C75				9/12/00		3		
*Dataram	DTM60158	MT48LC16M8A2TG-75 rev B	Micron	40484 rev A	10/9/00	B547			
Micron	MT9LSDT1672G-133B1				10/12/00				
Infineon	HYS72V16301GR-7.5-C				10/26/00		3		
ATP Electronics	AR16V72L8S4GAS		Samsung		10/18/00	B549		Yes	
Silicon Tech	INT72R8E16M4H-B75AV		NEC		10/19/00	B573		Yes	
Simple Tech	SINT7216118RD1-75AVG		NEC		10/19/00	B574		Yes	
Kingston	KVR133X72RC3L/128-IS	D45128441G5-A75-9JF	NEC	2025031-002 rev A00	11/9/00	B728		Yes	
*Dataram	DTM60168	MT48LC16M8A2TG-75 rev B	Micron	40506 rev A	11/20/00	B722			
Samsung	M390S1723CTU-C75				12/4/00		3	Yes	
ATP Electronics	AR16V72M8S4GAS	K4S640832D-TC75 die D	Samsung	SR168M0 8V rev 1	12/09/00	B833			
ATP Electronics	AR16V72N4S4GAS	K4S640432D-TC75 die D	Samsung	SR168N0 4V rev 2	12/22/00	B929	3	Yes	
Aved Memory Products	AMP377P1723AT2-C75/H	HY57V28820AT-H rev A	Hyundai	105399 rev B	12/29/00	B762	3	Yes	
*Viking	INT12818	UPD45128841G5-A75-9JF	NEC	9001689 G	1/8/01	C035	3		
*Dane-Elec	DP133R072163EL	K4S280832A-TC75	Samsung	SRBF 2568 rev A	1/30/01	B945		Yes	
Samsung	M390S1723CT1-C75				1/31/01		3		
Micron	MT18LSDT1672G-133C2				2/1/01		3		

*For further information contact CMTL at www.GOLD@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.

STL2 Server Board

**Registered, ECC, 133MHz SDRAM DIMM Modules
256MB Sizes (32Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	CAS Latency	Low Profile	EOL
Kentron	KT3272SSN3R-07L	48LC32M4A2	Micron	1672SSR2	9/12/00		3	YES	
Silicon Tech	INT72R8F32M8H-B75AV	K4S560832B-TC75	Samsung	00918 rev A	10/9/00	B575	3	YES	
Simple Tech	SINT7232218RD1-75AVG	K4S560832B-TC75	Samsung	00918 rev A	10/9/00	B576		YES	
Samsung	M390S3320BT1-C75				10/11/00				
ATP Electronics	AR32V72L8S8GAS	K4S560832A-TC75 die A	Samsung	SR168L08V rev 1	10/12/00	B550		YES	
*Dataram	DTM60125	MT48LC32M4A2TG-75 rev B	Micron	40481 rev A	10/21/00	B545			
*Viking	INT25621 And PCI3332X72RCL3-IA	K4S560832A-TC75 rev A	Samsung	9001689 rev A	10/25/00	B544			
Kingston	KVR133X72RC3/256-IS	TC59SM704FT-75	Toshiba	2022254-001 rev A00	10/25/00	B554			
Corsair	CM766S256-133/M	MT48LC32M4A2TG-75 rev B	Micron	50-00096 rev A	10/30/00	B581			
Kingston	KVR133X72RC3L/256-IS		Toshiba		11/9/00	B729		YES	
Corsair	CM764S256ALP-133/S	K4S560832A-TC75 rev A	Samsung	50-00104 rev B	11/18/00	B726			
*Dataram	DTM60172	HYB39S256800CT-7.5 rev C	Infineon	40506 rev A	12/5/00	B724			
ATP Electronics	AR32V72M8S4GAS	K4S280832B-TC75 rev B	Samsung	SR168M08V rev 1 Aug 2000	12/5/00	B812			
Legacy Electronics Inc.	37L6HS0R-1HAG	LES32808TA-7.5	Legacy	LE32872R rev A	12/7/00	B831			
Samsung	M390S3253BTU-C75				12/11/00		3	YES	
ATP Electronics	AR32V72N4S4GAS	K4S280432B-TC75 rev B	Samsung	SR168N04V rev 2	12/21/00	B891	3	YES	
*Viking	INT25624	HY57V28820AT-H	Hyundai	9001742 rev A	12/22/00	B887	3		
*Viking	INT25621	K4S560832A-TC75 rev A	Samsung	9001689 rev A	12/25/00	B544	3		
Silicon Tech	INT72R8E32M4H-A75AV	K4S280832C-TC75	Samsung	814	1/25/01	C193	3		
Simple Tech	SINT7232118RD2-75AVG	K4S280832C-TC75	Samsung	814	1/25/01	C196	3		
Infineon	HYS72V32300GR-7.5				1/25/01		3		
Aved Memory Products	AMP377P3253BTE-C75/S	K4S560832B-TC75 REV.B	Samsung	105399 REV. B	2/2/01	C288	3	Yes	

* For further information contact CMTL at www.GOLD@cmtlabs.com

STL2 Server Board

**Registered, ECC, 133MHz SDRAM DIMM Modules
512 MB Sizes (64Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	CAS Latency	Low Profile	EOL
Hitachi	HB52F649E1-75B				9/21/00		3		
Infineon	HYS72V64300GR-7.5-C2				9/12/00		3		
Samsung	M390S6450AT1-C75				9/21/00		3		
*Viking	INT51209	K4S560832A-TC75	Samsung	9001742	10/9/00	B543			
ATP Electronics	AR64V72L8SSGAS	K4S560832A-TC75 die A	Samsung	SR168L08V rev 1	10/9/00	B548		YES	
*Dataram	DTM60133	HYB39S256400CT-7.5 rev C2	Infineon	40481 rev A	10/20/00	B546			
*Dane-Elec	DP133R072643H	K4S560432A-TC75	Samsung	168-327201C rev C	12/4/2000	B645			
ATP Electronics	AR64V72M8S8GAS	K4S560832A-TC75 rev A	Samsung	SR168M08V rev 1 Aug 2000	12/8/2000	B811			
Corsair	CM766S512-133/S	K4S560432A-TC75	Samsung	50-00096 rev A	12/12/00	B582			
ATP Electronics	AR64V72N4S8GAS	K4S560432A-TC75 rev A	Samsung	SR168N04V rev 2	12/29/00	B935	3	Yes	
Virtium Technology Inc	VM375S6550E-GAS	K4S560432A-TC75	Samsung	16-25140A rev A	1/9/01	B995	3	Yes	
Kingston	KVR133X72RC3/512-IS	HYB39S256400AT-75	Infineon	2022254-001	1/15/01	B578	3		
GoldenRAM	7550040-GR	K4S560832A-TC75	Samsung	1030238-001 rev A	1/13/01	B639	3		
Simple Tech	SINT7264118IRD2-75AVG	K4S280432C-TC75	Samsung	758	1/17/01	C033	3		
Silicon Tech	INT72R4J64M4H-A75AV	K4S280432C-TC75	Samsung	758	1/17/01	C034	3		
Unigen	UG564T7588KG-PL	HN5225805BTT-75	Hitachi	RAWCARD-E	1/19/01	C069	3		
Aved Memory Products	AMP377P6453BT2-C75/S	K4S560832B-TC75	Samsung	105352 REV. B	1/18/01	C102	3		
Virtium Technology Inc	VM375S3320E-GAS	K4S280432C-TC75	Samsung	16-25140A REV. A	1/19/01	C106	3		
*Dataram	DTM60133(60133Z)	HM5225405BTT-75 rev A	Hitachi	40481 rev a2	1/29/01	C023			
Corsair	CM766S512-133/S	K4S560432B-TC/75	Samsung	50-00096 REV. A-RV1	1/29/01	C089	3		
*Dataram	DTM60133(60133Z)	K4S560432A-TC75 rev A	Samsung	40481 rev A2	1/30/01	C020	3		

~ Part number change/correction

* For further information contact CMTL at www.GOLD@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.

STL2 Server Board

**Registered, ECC, 133MHz SDRAM DIMM Modules
1G Sizes (64Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	CAS Latency	Low Profile	EOL
~Legacy Electronics Inc.	39B6JS0C-1AAG	K4S560432A-TC75	Samsung	LE1G472 R133 rev A	11/9/00	B623			
Samsung	M390S2858BT1-75			12/15/00	11/9/00		3		
ATP Electronics	AR128V72N4SSGAS	K4S560432A-TC75 rev A	Samsung	SR168N0 4V rev 2	12/26/00	B923	3		

~ **Part number change/correction**

* For further information contact CMTL at www.GOLD@cmlabs.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.

Distributor Information

ASIA

Vendor Name	Distributor Name	Contact Name	PhoneNumber	Fax Number/E-Mail
ATP Electronics, Inc	ATP Electronics, Inc. Taiwan	Suzan Chang	011-886-2-2718-8405	011-886-2-2718-8253
Corsair (USA)		Richard Hashim	01-510-657-8747 ext. 204	http://www.corsairmicro.com/sales.htm
Dataram	Avnet, Inc.		800-426-7999	
Dataram	Arrow ICP		888-427-2250	
Dataram	Pioneer Standard Electronics/Keylink Systems		800-539-5465	
Dataram	Wyle Systems		800-318-9953	
Samsung				http://www.korea.samsungsemi.com/top/contactus/contactus_index.htm
Simple Tech				http://www.simpletech.com/about/buyprod.html
Silicon Tech				http://www.silicontech.com/contact/salescontacts.shtml
Viking Components				http://www.vikingcomponents.com/company/offices.cfm

Europe

Vendor Name	Distributor Name	Contact Name	PhoneNumber	Fax Number/E-Mail
ATP Electronics, Inc	Llanos & Asociados (Spain)	Jose Vasquez	34-902-40-39-38	34-94-480-41-89
Corsair (USA)		Richard Hashim	01-510-657-8747 ext. 204	http://www.corsairmicro.com/sales.htm
Dane-Elec			(353) 91 55 30 00	: sales@dane-elec.ie
Dataram	Avnet, Inc.		800-426-7999	
Dataram	Arrow ICP		888-427-2250	
Dataram	Pioneer Standard Electronics/Keylink Systems		800-539-5465	
Dataram	Wyle Systems		800-318-9953	
Hyundai		tkhan	+82-2-746-6639	T.K.Han@hei.co.kr
Infineon				http://www.infineon.com/business/distribut/index.htm
Kingston				http://www.kingston.com/partners/default.asp
Samsung				http://www.korea.samsungsemi.com/top/contactus/contactus_index.htm
Silicon Tech Inc.	Microtronica-Sweden	Jorgen Carlsson	00 46 86 807800	http://www.silicontech.com/contact/salescontacts.shtml
Silicon Tech Inc.	Microtronica-Denmark	Brigitte Kraglund	00 45 44 508100	http://www.silicontech.com/contact/salescontacts.shtml
Silicon Tech Inc.	Eurodis Bytech	Carol Boycott	00 44 1256 379312	http://www.silicontech.com/contact/salescontacts.shtml
Silicon Tech Inc.	Eurocomposant	Julie Fichot	00 33 130649515	http://www.silicontech.com/contact/salescontacts.shtml
Silicon Tech Inc.	NBN System Components	Adalbert Reidle	00 49 815292360	http://www.silicontech.com/contact/salescontacts.shtml
Viking				http://www.vikingcomponents.com/company/offices.cfm

Japan

Vendor Name	Distributor Name	Contact Name	PhoneNumber	Fax Number/E-Mail
ATP Electronics, Inc	ATP Electronics, Inc. Taiwan	Suzan Chang	011-886-2-2718-8405	011-886-2-2718-8253
Corsair (USA)		Richard Hashim	01-510-657-8747 ext. 204	http://www.corsairmicro.com/sales.htm
Dataram	Avnet, Inc.		800-426-7999	
Dataram	Arrow ICP		888-427-2250	
Dataram	Pioneer Standard Electronics/Keylink Systems		800-539-5465	
Dataram	Wyle Systems		800-318-9953	
Infineon				http://www.infineon.com/business/distribut/index.htm
Kingston				http://www.kingston.com/partners/default.asp
Samsung				http://www.korea.samsungsemi.com/top/contactus/contactus_index.htm
Silicon Tech Inc.				http://www.silicontech.com/contact/salescontacts.shtml
Simple Tech				http://www.simpletech.com/about/buyprod.html
Smart Modular				http://www.smartm.com/howtobuy.html
Viking				http://www.vikingcomponents.com/company/offices.cfm

South America

Vendor Name	Distributor Name	Contact Name	Phone Number	Fax Number/E-Mail
ATP Electronics, Inc	ATP Electronics, Inc. - U.S.A.	Martha Wu	408-732-5000	408-732-5055
Corsair (USA)		Richard Hashim	01-510-657-8747 ext. 204	http://www.corsairmicro.com/sales.htm
Dataram	Avnet, Inc.		800-426-7999	
Dataram	Arrow ICP		888-427-2250	
Dataram	Pioneer Standard Electronics/Keylink Systems		800-539-5465	
Dataram	Wyle Systems		800-318-9953	
Infineon				http://www.infineon.com/business/distribut/index.htm
Kingston				http://www.kingston.com/partners/default.asp
Samsung				http://www.korea.samsungsemi.com/top/contactus/contactus_index.htm
Silicon Tech Inc.				http://www.silicontech.com/contact/salescontactacts.shtml
Simple Tech				http://www.simpletech.com/about/buyprod.html
Viking				http://www.vikingcomponents.com/company/offices.cfm

North America

Vendor Name	Distributor Name	Contact Name	PhoneNumber	Fax Number/E-Mail
ATP Electronics, Inc	ATP Electronics, Inc. -U.S.A.	Martha Wu	408-732-5000	408-732-5055
Dataram	Avnet, Inc.		800-426-7999	
Dataram	Arrow ICP		888-427-2250	
Dataram	Pioneer Standard Electronics/Keylink Systems		800-539-5465	
Dataram	Wyle Systems		800-318-9953	
Infineon				http://www.infineon.com/business/distributor/index.htm
Kingston				http://www.kingston.com/partners/default.asp
Samsung				http://www.korea.samsungsemi.com/top/contactus/contactus_index.htm
Silicon Tech Inc.				http://www.silicontech.com/contact/salescontacts.shtml
Simple Tech				http://www.simpletech.com/about/buyproduct.html
Viking Components			800.338.2361 949.643.7255	http://www.vikingcomponents.com/company/offices.cfm

CMTLsm (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.

Intel® Product Dealers and Product Integrators

The Intel Product Dealer program was designed in North America to support system integrators building and selling a limited number of systems per year. More information on this program is available through the Intel web site at <http://channel.intel.com>. Similar programs exist in European, Middle Eastern, African, Asia-Pacific and South American regions.

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 Pentium® III Xeon™ 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 baseboard. 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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