

Intel[®] Server Board SE7230NH1-E Memory List Test Report Summary



Revision 30.0
December 2008

Revision History		
Date	Rev	Modifications
Sept/05	1.0	Initial Release
Oct/05	2.0	Added Hynix* and Micron* 1GB parts. (In shaded area)
Oct/05	3.0	Added ATP*, Apacer*, Samsung* and Micron* 512MB parts. Added Apacer and ATP 1GB parts. (In shaded area) Updated unleaded parts with correct shading.
Nov/05	4.0	Added Legend, Samsung and Infineon 256MB parts. Added Apacer, Kingston, Dataram, Infineon, Micron, Samsung and Buffalo 512MB parts. Added Buffalo, Apacer, Dataram, Samsung, Micron and Wintec 1GB parts. Added ATP, Infineon and Micron 2GB parts. (In shaded area)
Dec/05	5.0	Added Smart 512MB and 1GB parts. Added Buffalo 256MB and 1GB parts. Added Legend 512MB parts. (In shaded area)
Jan/06	6.0	Added Buffalo 512MB part. Added Kingston 1GB and 2GB parts. Added Dataram 2GB part. (In shaded area)
Jan/06	7.0	Added Wintec 512MB part. (In shaded area)
Feb/06	8.0	Added Samsung 1G & 2G parts. Added Micron 1G part. (In shaded area)
Mar/06	9.0	Added Buffalo, Wintec & Unigen 512MB parts. Added Wintec, Smart, Legend & Buffalo 1GB parts. Added Micron & Samsung 2G parts. (In shaded area)
Mar/06	10.0	Added Dataram 512MB and 1GB parts. Added Smart 2GB part. (In shaded area)
May/06	11.0	Infineon name change to Qimonda effective May 1 st , 2006. Added Legacy & Dane-Elec 1G parts. (In shaded area)
June/06	12.0	Added Nanya and Apacer 512MB and 1G parts. Added Dane Elec 512MB parts. Added Legacy 1G part. Added ATP 2G part. (In shaded area)
July/06	13.0	Added Kingston 512MB, 1GB, and 2GB parts. (In shaded area)
Aug/06	14.0	Added TRS and Kingston 512MB parts. Added Kingston and Smart 1GB parts. Added Apacer 2GB part. (In shaded area)
Aug/06	15.0	Added TRS, Dane-Elec, and Ventura Technology Group 512MB parts. Added Dane-Elec 1GB and 2GB parts. (In shaded area)
Oct/06	16.0	Added Smart 512MB part. Added Smart and Ventura Technology Group 1GB parts. (In shaded area)
Nov/06	17.0	Added Viking, Kingston, and Dataram 512MB parts. Added Smart, Kingston, Viking, and Dataram 1GB parts. Added Kingston 2GB part. (In shaded area)
Jan/07	18.0	Added ATP Electronics 512MB part. Added Kingston 1GB part. (In shaded area)
Feb/07	19.0	Added Dataram 512MB part. Added Dataram and ATP Electronics 1GB parts. (In shaded area)
Feb/07	20.0	Added ATP Electronics 512MB part. Added Dataram and TRS 1GB parts. (In shaded area)
Feb/07	21.0	Added Smart 2GB part. Updated vendor contact information. (In shaded area)
Mar/07	22.0	Added ATP Electronics 2GB part. (In shaded area)
Mar/07	23.0	Updated contact information. No new parts added.
May/07	24.0	Added Smart 512MB part. Added Kingston 2GB part. (In shaded area)
May/07	25.0	Additional memory parts added. (In shaded area)
Nov/07	26.0	Additional memory parts added. (In shaded area)
Apr/08	27.0	Additional memory parts added. (In shaded area)
May/08	28.0	Additional memory parts added. (In shaded area)
Nov/08	29.0	Additional memory parts added. (In shaded area)
Dec/08	30.0	Additional memory parts added. (In shaded area)

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The Intel® Server Board SE7230NH1-E 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 Board SE7230NH1-E. 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 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 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 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:

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Qualified Memory for the Intel® Server Board SE7230NH1-E

The memory module on the server board SE7230NH1-E has 4 DIMM sockets, which can hold up to 8 GB of Unbuffered ECC and non-ECC DDR2-400, DDR2-533 or DDR2-667 memory using four 72-bit DIMM modules. The following memory features are supported:

- DDR2-400, DDR2-533 and DDR2-667 Unbuffered ECC and non-ECC compatible 1.8V modules (in compliance with the DDR JEDEC DIMM Specification)
- DIMMs with capacity of 256 MB, 512 MB, 1 GB and 2 GB. Other DRAM sizes may function correctly but will not be validated.
- Minimum configuration is 256 MB using one 256 MB DIMM.
- Maximum configuration is 8 GB.

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

DDR2-400 Unbuffered SDRAM Module Matrix					
DIMM Capacity	DIMM Organization	SDRAM Density	SDRAM Organization	# SDRAM Devices/rows/Banks	# Address bits rows/Banks/column
256MB	32M x 72	256Mbit	32M x 8	9/1/4	13/2/10
512MB	64M x 72	256Mbit	32M x 8	18/2/4	13/2/10
512MB	64M x 72	512Mbit	64M x 8	9/1/4	14/2/10
1GB	128M x 72	512Mbit	64M x 8	18/2/4	14/2/10
1GB	128M x 72	1Gbit	128M x 8	9/1/8	14/3/10
2GB	256M x 72	1Gbit	128M x 8	18/2/8	14/3/10
DDR2-533 Unbuffered SDRAM Module Matrix					
DIMM Capacity	DIMM Organization	SDRAM Density	SDRAM Organization	# SDRAM Devices/rows/Banks	# Address bits rows/Banks/column
256MB	32M x 72	256Mbit	32M x 8	9/1/4	13/2/10
512MB	64M x 72	256Mbit	32M x 8	18/2/4	13/2/10
512MB	64M x 72	512Mbit	64M x 8	9/1/4	14/2/10
1GB	128M x 72	512Mbit	64M x 8	18/2/4	14/2/10
1GB	128M x 72	1Gbit	128M x 8	9/1/8	14/3/10
2GB	256M x 72	1Gbit	128M x 8	18/2/8	14/3/10
DDR2-667 Unbuffered SDRAM Module Matrix					
DIMM Capacity	DIMM Organization	SDRAM Density	SDRAM Organization	# SDRAM Devices/rows/Banks	# Address bits rows/Banks/column
256MB	32M x 72	256Mbit	32M x 8	9/1/4	13/2/10
512MB	64M x 72	256Mbit	32M x 8	18/2/4	13/2/10
512MB	64M x 72	512Mbit	64M x 8	9/1/4	14/2/10
1GB	128M x 72	512Mbit	64M x 8	18/2/4	14/2/10
1GB	128M x 72	1Gbit	128M x 8	9/1/8	14/3/10
2GB	256M x 72	1Gbit	128M x 8	18/2/8	14/3/10

Memory features are detailed in *the Intel® Server Board SE7230NH1-E Technical Product Specification* available on-line at <http://support.intel.com/support/motherboards/server/SE7230NH1-E>

The following table lists DIMM devices known to be compatible with the Intel® Server Board SE7230NH1-E. 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.

Server Board SE7230NH1-E

Unbuffered, ECC, DDR2-400 DIMM Modules 256MB Sizes (32Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
Micron*	MT9HTF3272AY-40EB3		Micron		8/17/05	3	Yes	(32Mx8)*9	
Samsung	M391T3253FG0-CCC	K4T56083QF-GCCC	Samsung		11/1/05	3		(32Mx8)*9	
Samsung	M391T3253FZ0-CCC		Samsung		11/1/05	3	Yes	(32Mx8)*9	
Qimonda	HYS72T32000HU-5-A	HYB18T256800AF5-A	Qimonda		11/4/05	3	Yes	(32Mx8)*9	
Samsung	M391T3253FG3-CCC	K4T56083QF-GCCC	Samsung		11/4/05	3		(32Mx8)*9	
Samsung	M391T3253FZ3-CCC	K4T56083QF-ZCCC	Samsung		11/4/05	3	Yes	(32Mx8)*9	

Unbuffered, ECC, DDR2-533 DIMM Modules 256MB Sizes (32Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
Micron	MT9HTF3272AY-53EB3		Micron		8/21/05	4	Yes	(32Mx8)*9	
Samsung*	M391T3253FG0-CD5	K4T56083QF-GCD5	Samsung		8/25/05	4		(32Mx8)*9	
Samsung	M391T3253FZ0-CD5		Samsung		8/25/05	4	Yes	(32Mx8)*9	
Qimonda	HYS72T32000HU-3.7.A	HYB18T256AF37-A	Qimonda		11/1/05	4	Yes	(32Mx8)*9	
Samsung	M391T3253FG3-CD5	K4T56083QF-GCD5	Samsung		11/4/05	4		(32Mx8)*9	
Samsung	M391T3253FZ3-CD5	K4T56083QF-ZCD5	Samsung		11/4/05	4	Yes	(32Mx8)*9	

Unbuffered, ECC, DDR2-667 DIMM Modules 256MB Sizes (32Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
Samsung	M391T3253FZ3-CE6	K4T56083QF-ZCE6	Samsung		8/19/05	5	Yes	(32Mx8)*9	

(+) 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.

Server Board SE7230NH1-E

Unbuffered, Non-ECC, DDR2-400 DIMM Modules 256MB Sizes (32Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL

Unbuffered, Non-ECC, DDR2-533 DIMM Modules 256MB Sizes (32Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
+Legend	L32642CE-UR1H2CBF	HY5PS56821F-C4 rev A	Hyundai	B62URCA rev 1	11/1/05	4		(32Mx8)*8	

Unbuffered, Non-ECC, DDR2-667 DIMM Modules 256MB Sizes (32Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
+Buffalo	D2U667C-S256MBJ	MT47H32M8BP-3 rev B	Micron	2DUD18F-AA	12/1/05	5		(32Mx8)*8	

(+) 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.

Server Board SE7230NH1-E
Unbuffered, 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
Samsung	M391T6553BG0-CCC	K4T51083QB-GCCC	Samsung		10/10/05	3		(64Mx8)*9	
Samsung	M391T6553BZ0-CCC		Samsung		10/10/05	3	Yes	(64Mx8)*9	
Samsung	M391T6453FZ0-CCC		Samsung		10/10/05	3	Yes	(32Mx8)*18	
Samsung	M391T6453FG0-CCC	K4T56083QF-GCCC	Samsung		10/11/05	3		(32Mx8)*18	
Micron	MT18HTF6472AY-40EB2	MT47H32M8BP-5E	Micron		11/1/05	3	Yes	(32Mx8)*9	
Micron	MT9HTF6472AY-40EB3	MT47H64M8CB-53EB	Micron		11/1/05	3	Yes	(32Mx8)*9	
Samsung	M391T6453FG3-CCC	K4T56083QF-GCCC	Samsung		11/4/05	3		(32Mx8)*18	
Samsung	M391T6453FZ3-CCC	K4T56083QF-ZCCC	Samsung		11/4/05	3	Yes	(32Mx8)*18	
Viking	VR5EU647218EBPA1	HY5PS12821BF-P-C4 rev B	Hynix	0001026C rev C	10/19/06	3	Yes	(64Mx8)*9	

Unbuffered, ECC, DDR2-533 DIMM Modules
512MB Sizes (64Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
Hynix*	HYMP564U728-C4	HY5PS12821-F-C4	Hynix		8/22/05	4		(64Mx8)*9	
Qimonda*	HYS72T64000HU-3.7-A	HYB18T512800 AF-37-A	Qimonda		8/16/05	4	Yes	(64Mx8)*9	
+Apacer	75.963A2.G01	EDE5108AGSE-5C-E rev G	Elpida	48.16193.0 10 na	10/17/05	4	Yes	(64Mx8)*9	
Micron	MT18HTF6472AY-53EB2	MT47H32M8BP	Micron		10/03/05	4	Yes	(32Mx8)*18	
Samsung	M391T6553BZ0-CD5	K4T51083QB-ZCD5	Samsung		10/11/05	4	Yes	(64Mx8)*9	
+Apacer	75.963A2.G02	K4T51083QC-ZCD5 rev C	Samsung	48.16193.0 10 na	10/20/05	4	Yes	(64Mx8)*9	
+Kingston	KVR533D2E4/512I	NT5TU64M8AE-37B rev A	Nanya	2025260-0F1.C00 na	11/3/05	4		(64Mx8)*9	
+Dataram	DTM63319A	HYB18T512800 AF37 rev A	Qimonda	40038A rev A	11/9/05	4		(64Mx8)*9	
Micron	MT9HTF6472AY-53EB3	MT47H64M8CB-37E:8	Micron		11/1/05	4	Yes	(64Mx8)*9	
Samsung	M391T6453FG0-CD5	K4T56083QF-GCD5	Samsung		11/1/05	4		(32Mx8)*18	
Samsung	M391T6453FZ0-CD5		Samsung		11/1/05	4	Yes	(32Mx8)*18	
Samsung	M391T6553CZ3-CD5	K4T51083QB-ZCD5	Samsung		11/1/05	4	Yes	(64Mx8)*9	
Samsung	M391T6453FG3-CD5	K4T56083QF-GCD5	Samsung		11/4/05	4		(32Mx8)*18	
Samsung	M391T6453FZ3-CD5	K4T56083QF-ZCD5	Samsung		11/4/05	4	Yes	(32Mx8)*18	
+Buffalo	D2U533B-ES512MBJ	MT47H64M8CB-37E rev B	Micron	2DUA18F-BA na	12/5/05	4	Yes	(64Mx8)*9	

**Unbuffered, ECC, DDR2-533 DIMM Modules
512MB Sizes (64Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
+Smart Modular Technologies	SG647UDR264843-SC	K4T51083QC-ZCD5 rev C	Samsung	M391T6553CZ0-V03 (104)	3/6/06	4	Yes	(64Mx8)*9	
+Dataram	DTM63319B	NT5TU64M8AE-37B rev A	Nanya	40038A rev A	3/15/06	4	Yes	(64Mx8)*9	
Nanya Technology Corporation	NT512T72U89A0BY-37B	NT5TU64M8AE-37B rev A	Nanya	NTPCB000 14P na	05/10/06	4	Yes	(64Mx8)*9	
TRS	TRS30281X	HYB18T512800 AF37 rev A	Infineon	M0544LA1 rev 1	7/19/06	4	Yes	(64Mx8)*9	
Kingston	KVR533D2E4/512I	E5108AG-5C-E rev G	Elpida	2025260-0F1.C00 na	7/21/06	4	Yes	(64Mx8)*9	
TRS	TRS30283X	K4T51083QC-ZCD5 rev C	Samsung	M0544LA1 rev 1	7/25/06	4	Yes	(64Mx8)*9	
Dane-Elec	D2D533-072644NG	MT47H64M8B6-37E rev D	Micron	D2U72F rev 1	7/27/06	4	Yes	(64Mx8)*9	
TRS	TRS30282X	E5108AG-5C-E rev G	Elpida	M0544LA1 rev 1	7/28/06	4	Yes	(64Mx8)*9	
TRS	TRS30281	HYB18T512800 AF37 rev A	Infineon	M0544LA1 rev 1	8/3/06	4	Yes	(64Mx8)*9	
TRS	TRS30282	E5108AG-5C-E rev G	Elpida	M0544LA1 rev 1	8/3/06	4	Yes	(64Mx8)*9	
TRS	TRS30283	K4T51083QC-ZCD5 rev C	Samsung	M0544LA1 rev 1	8/7/06	4	Yes	(64Mx8)*9	
Kingston	KVR533D2E4/512I	E5108AGBG-6E-E rev G	Elpida	2025260-0F1.C00 na	11/2/06	4	Yes	(64Mx8)*9	
ATP Electronics	AJ64K72F8BHD5S	K4T51083QC-ZCD5 rev C	Samsung	SJ240F08 K1 na	12/14/06	4	Yes	(64Mx8)*9	
Dataram	DTM63319C	HY5PS12821CF P-Y5 rev C	Hynix	40038A rev A	1/19/07	4	Yes	(64Mx8)*9	
Kingston	KVR533D2E4/512I	NT5TU64M8BE-3C rev B	Nanya	2025260-0F1.C00 na	5/8/07	4	Yes	(64Mx8)*9	
Buffalo	D2U533B-ES512EGJ	E5108AGBG-5C-E rev G	Elpida	2DUA18F-BA na	10/10/07	4	Yes	(64Mx8)*9	
Kingston	KVR533D2E4/512I	E5108AGBG(SE)-6E-E rev G	Elpida	2025320-0F1.A00 na	1/25/08	4	Yes	(64Mx8)*9	

**Unbuffered, ECC, DDR2-667 DIMM Modules
512MB Sizes (64Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
Qimonda	HYS72T64000HU-5-A	HYB18T512800 AF5-A	Qimonda		8/24/05	3	Yes	(32Mx8)*18	
Micron	MT9HTF6472AY-667B3		Micron		9/15/05	5	Yes	(64Mx8)*9	
Samsung	M391T6453FZ3-CE6	K4T56083QF-ZCE6	Samsung		9/15/05	5	Yes	(32Mx8)*18	
+ATP Electronics	AJ64K72F8BHE6S	K4T51083QC-ZCE6 rev C	Samsung	SJ240F08 K1	9/26/05	5	Yes	(64Mx8)*9	
Qimonda	HYS72T64000HU-3S-A	HYB18T512800 AF-3S-A	Qimonda		11/1/05	5	Yes	(64Mx8)*9	
Samsung	M391T6553CZ3-CE6	K4T510830C-ZCE6	Samsung		11/1/05	5	Yes	(64Mx8)*9	
+Smart Modular Technologies	SM647UDR26485-2-I	HYB18T512800 AF3S rev A	Qimonda	0510 na	11/15/05	5		(64Mx8)*9	
+Smart Modular Technologies	SM647UDR26485-2-S	K4T51083QC-ZCE6 rev C	Samsung	M391T6553CZ0-V03	11/22/05	5	Yes	(64Mx8)*9	
+Wintec Industries	39C727284C	K4T51083QC-ZCE6 rev C	Samsung	B62URCF 1.00 na	12/22/05	5	Yes	(64Mx8)*9	
Apacer	75.963A4.G02	K4T51083QC-ZCE6 rev C	Samsung	48.16193.0 9D rev D	05/19/06	5	Yes	(64Mx8)*9	
Ventura Technology Group	D2-52CD63LV-555	EDE5108AGBG-6E-E rev G	Elpida	D2U72F na	8/7/06	5	Yes	(64Mx8)*9	
Dataram	DTM63321C	NT5TU64M8AE-3C rev A	Nanya	40038A rev A	11/6/06	5	Yes	(64Mx8)*9	
Kingston	KVR667D2E5/512I	NT5TU64M8AE-3C rev A	Nanya	2025320-0F1.A00 na	11/13/06	5	Yes	(64Mx8)*9	
ATP Electronics	AJ64K72F8BHE6S	K4T51083QE-ZCE6 rev E	Samsung	D2U72F na	2/5/07	5	Yes	(64Mx8)*9	
Smart Modular Technologies	SG647UDR264852ES	GSW64M8XB3IT 5X4GSE rev G	Smart	PG54G240 NUBUB1R F rev A	4/20/07	5	Yes	(64Mx8)*9	
Dataram	DTM63321D	HY5PS12821CF P-Y5 rev C	Hynix	40038A rev A	5/2/07	5	Yes	(64Mx8)*9	
Kingston	KVR667D2E5/512I	NT5TU64M8BE-3C rev B	Nanya	2025320-0F1.A00 na	5/14/07	5	Yes	(64Mx8)*9	

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Server Board SE7230NH1-E
Unbuffered, Non-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

Unbuffered, Non-ECC, DDR2-533 DIMM Modules
512MB Sizes (64Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
+Legend	L64642CE-UR1H2H1F	HY5PS12821F-C4 rev F	Hynix	B62URCD rev 1	11/10/05	4		(64Mx8)*9	
+Buffalo	D2U533B-S512NAJ	NT5TU64M8AE-37B rev A	Nanya	2DUD18F-AA na	2/21/06	4	Yes	(64Mx8)*9	
Dane-Elec	D2D533-064644NG	EDE5108AG-5C-E rev G	Elpida	D2U64D na	04/27/06	4	Yes	(64Mx8)*9	
Dane-Elec	D2D533-064644NG	MT47H64M8CB-37E rev B	Micron	D2U172-B rev B	04/28/06	4	Yes	(64Mx8)*9	

Unbuffered, Non-ECC, DDR2-667 DIMM Modules
512MB Sizes (64Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
+ATP Electronics	AJ64K64D8BH E6S	K4T51083QC-ZCE6 rev C	Samsung	SJ240D08K1	10/6/05	5		(64Mx8)*9	
+Buffalo	D2U667C-S512MBJ	MT47H64M8CB-3 rev B	Micron	2DUD18F-AA na	11/7/05	5		(64Mx8)*8	
+Legend	L64642CF-UR1H2H1F	HY5PS12821AFP-Y5 rev A	Hynix	B62URCD rev 1	11/11/05	5		(64Mx8)*8	
Unigen	UG64T6400L8 DU-6ADEF-CD	MT47H64M8B6-3 rev D	Micron	Alder-8 na (E114139)	2/8/06	5	Yes	(64Mx8)*8	
Kingston	KVR667D2E5/512I	E5108AG-6E-E rev G	Elpida	2025320.0F1.A00 na	6/21/06	5	Yes	(64Mx8)*8	
Smart Modular Technologies	SG647UDR264 852-SC	K4T51083QC-ZCE6 rev C	Samsung	M391T6553C Z0-V03 na	8/30/06	5	Yes	(64Mx8)*8	

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Server Board SE7230NH1-E

Unbuffered, 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
Micron	MT18HTF12872AY-40EA1		Micron		8/31/05	3	Yes	(64Mx8)*18	
Qimonda	HYS72T128020GU-5-A	HYB18T512 800AC5 FSS13811	Qimonda		9/15/05	3		(64Mx8)*18	
Qimonda	HYS72T128020HU-5-A		Qimonda		9/15/05	3	Yes	(64Mx8)*18	
Samsung	M391T2953BG0-CCC	K4T51083QB-GCCC	Samsung		11/4/05	3		(64Mx8)*18	
Samsung	M391T2953BZ0-CCC		Samsung		11/4/05	3	Yes	(64Mx8)*18	
Samsung	M391T2953CZ3-CCC	K4T51083QC-ZCCC	Samsung		1/31/06	3	Yes	(64Mx8)*18	
Samsung	M391T2953CZ0-CCC	K4T51083QC-ZCCC	Samsung		1/31/06	3	Yes	(64Mx8)*18	
Micron	MT18HTF12872AY-40EB1	MT47H64M8CB-5E:B	Micron		1/31/06	3	Yes	(64Mx8)*18	
Viking	VR5EU287218EBPA1	HY5PS12821BFP-C4 rev B	Hynix	0001026C rev C	10/24/06	3	Yes	(64Mx8)*18	

Unbuffered, ECC, DDR2-533 DIMM Modules 1GB Sizes (128Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
Micron	MT18HTF12872AY-53EA1	MT47H64M8BP	Micron		8/27/05	4	Yes	(64Mx8)*18	
Qimonda	HYS72T128020HU-3.7-A	HYB18T512800AF-37-A	Qimonda		9/12/05	4	Yes	(64Mx8)*18	
Hynix	HYMP512U728-C4	HY5PS12821F-C4	Hynix		9/30/05	4		(64Mx8)*18	
+Apacer	75.063A2.G01	EDE5108AGSE-5C-E rev G	Elpida	48.16193.010 na	10/17/05	4	Yes	(64Mx8)*18	
Samsung	M391T2953BZ0-CD5	K4T51083QB-ZCD5	Samsung		10/3/05	4	Yes	(64Mx8)*18	
+Apacer	75.063A2.G02	K4T51083QC-ZCD5 rev C	Samsung	48.16193.010 na	10/21/05	4	Yes	(64Mx8)*18	
+Dataram	DTM63306C	HYB18T512800AF37 rev A	Qimonda	40031A rev A	11/4/05	4		(64Mx8)*18	
Samsung	M391T2953CZ3-CD5	K4T51083QB-ZCD5	Samsung		11/1/05	4	Yes	(64Mx8)*18	
Micron	MT18HTF12872AY-53EB1	MT47H64M8CB-37E:B	Micron		11/4/05	4	Yes	(64Mx8)*18	
+Buffalo	D2U533B-E1GMBJ	MT47H64M8CB-37E rev B	Micron	2DUZ28F-AA na	11/22/05	4	Yes	(64Mx8)*18	
+Kingston	KVR533D2E4/1GI	HYB18T512800AF37 rev A	Qimonda	2025230-0F1.D00 na	12/7/05	4		(64Mx8)*18	
+Wintec Industries	39C734284C	K4T51083QC-ZCD5 rev C	Samsung	D2U872 na	2/9/06	4	Yes	(64Mx8)*18	
+Smart Modular Technologies	SG1287UDR264843-SC	K4T51083QC-ZCD5 rev C	Samsung	M391T2953CZ0 na	3/1/06	4	Yes	(64Mx8)*18	
Nanya Technology Corporation	NT1GT72U8PA0BY-37B	NT5TU64M8AE-37B rev A	Nanya	NTPCB00015P na	05/08/06	4	Yes	(64Mx8)*18	
Kingston	KVR533D2E4/1GI	E5108AG-5C-E rev G	Elpida	2025230-0F1.D00 na	7/24/06	4	Yes	(64Mx8)*18	

**Unbuffered, ECC, DDR2-533 DIMM Modules
1GB Sizes (128Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
Dane-Elec	D2D533-072284NG	MT47H64M8B6-37E rev D	Micron	D2U72G rev 1	8/1/06	4	Yes	(64Mx8)*18	
Kingston	KVR533D2E4/1GI	E5108AGBG-6E-E rev G	Elpida	2025230-0F1.D00 na	11/21/06	4	Yes	(64Mx8)*18	
Dataram	DTM63306E	HY5PS12821CFP-Y5 rev C	Hynix	40031A rev A	1/23/07	4	Yes	(64Mx8)*18	
TRS	TRS30309X	HYB18T512800AF37 rev A	Qimonda	M0540LA1 rev 1	2/8/07	4	Yes	(64Mx8)*18	
Kingston	KVR533D2E4/1GI	NT5TU64M8BE-3C rev B	Nanya	2025321-0F1.A00 na	5/10/07	4	Yes	(64Mx8)*18	

**Unbuffered, ECC, DDR2-667 DIMM Modules
1GB Sizes (128Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
+Dataram	DTM63306D	NT5TU64M8AE-37B rev A	Nanya	40031A rev A	3/13/06	4	Yes	(64Mx8)*18	
Qimonda	HYS72T128020HU-3S-A	HYB18T512800AF-3S-A	Qimonda		9/12/05	5	Yes	(64Mx8)*18	
Micron	MT18HTF12872AY-667B3		Micron		9/21/05	5	Yes	(64Mx8)*18	
+ATP Electronics	AJ28K72G8BHE6S	K4T51083QC-ZCE6 rev C	Samsung	SJ240G08K 1	9/28/05	5		(64Mx8)*18	
+Wintec Industries	39C737281A	HYB18T512800AF3S rev A	Qimonda	B82URCG 1.00	10/27/05	5		(64Mx8)*18	
Samsung	M391T2953CZ3-CE6	K4T510830C-ZCE6	Samsung		11/1/05	5	Yes	(64Mx8)*18	
+Smart Modular Technologies	SG1287UDR264852 MB	MT47H64M8CB-3:B rev B	Micron	PG58G240 NUBUB1RG rev A	11/16/05	5	Yes	(64Mx8)*18	
Legacy Electronics Inc.	B517K4C20GC-30Y	K4T51083QC-ZCE6 rev C	Samsung	D2U72G rev 1.0	03/29/06	5	Yes		
Apacer	75.063A4.G02	K4T51083QC-ZCE6 rev C	Samsung	48.18193.09 3 rev 3	05/22/06	5	Yes	(64Mx8)*18	
Kingston	KVR667D2E5/1GI	E5108AG-6E-E rev G	Elpida	2025321-0F1.A00 na	7/15/06	5	Yes	(64Mx8)*18	
Smart Modular Technologies	SG1287UDR264852-SC	K4T51083QC-ZCE6 rev C	Samsung	M391T2953 CZ0 na	7/26/06	5	Yes	(64Mx8)*18	
Ventura Technology Group	D2-54CD64LV-555	EDE5108AGBG-6E-E rev G	Elpida	D2U72G na	8/31/06	5	Yes	(64Mx8)*18	
Smart Modular Technologies	SG1287UDR264852 B	HYB18T512800BF3S rev B	Qimonda (Infineon)	240-7-1 (K0552)	9/6/06	5	Yes	(64Mx8)*18	
Smart Modular Technologies	SG1287UDR264852 NA	NT5TU64M8AE-3C rev A	Nanya	PG58G240 NUBUB1RG rev A	9/20/06	5	Yes	(64Mx8)*18	
Smart Modular Technologies	SG1287UDR264852 ES	G64M8XB3IT5X4GSE rev A	Smart	PG58G240 NUBUB1RG rev A	9/27/06	5	Yes	(64Mx8)*18	
Smart Modular Technologies	SG1287UDR264852 SC	K4T51083QC-ZCE6 rev C	Samsung	PG58G240 NUBUB1RG rev A	10/6/06	5	Yes	(64Mx8)*18	
Kingston	KVR667D2E5/1GI	NT5TU64M8AE-3C rev A	Nanya	2025321-0F1.A00 na	10/10/06	5	Yes	(64Mx8)*18	

**Unbuffered, ECC, DDR2-667 DIMM Modules
1GB Sizes (128Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
Dataram	DTM63324C	NT5TU64M8AE-3C rev A	Nanya	40031A rev A	11/8/06	5	Yes	(64Mx8)*18	
ATP Electronics	AJ28K72G8BHE6S	K4T51083QE-ZCE6 rev E	Samsung	D2U72G V1.0	1/25/07	5	Yes	(64Mx8)*18	
Dataram	DTM63324D	HY5PS12821CFP-Y5 rev C	Hynix	40031A rev A	2/12/07	5	Yes	(64Mx8)*18	
Dataram	DTM63324E	HY5PS12821CFP-Y5 rev C	Hynix	40082A rev A	4/26/07	5	Yes	(64Mx8)*18	
Kingston	KVR667D2E5/1GI	NT5TU64M8BE-3C rev B	Nanya	2025321-0F1.A00 na	5/18/07	5	Yes		
Kingston	KVR667D2E5/1GI	E1108ACBG-8E-E rev C	Elpida	2025320-0F1.00A rev A	10/27/08	5	Yes	128M x 8	
Dataram	DTM63391A	HYB18T1G800C2F-3S rev C2	Qimonda	40083A rev A	12/05/08	5	Yes	128M x 8	

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Server Board SE7230NH1-E

Unbuffered, Non-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

Unbuffered, Non-ECC, DDR2-533 DIMM Modules 1GB Sizes (128Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
+Buffalo	D2U533B-1GMBJ	MT47H64M8CB-37E rev B	Micron	2DUZ28F-AA	10/25/05	4		(64Mx8)*16	
Dane-Elec	D2D533-064284NG	EDE5108AG-5C-E rev G	Elpida	D2U64E na	04/13/06	4	Yes		

Unbuffered, Non-ECC, DDR2-667 DIMM Modules 1GB Sizes (128Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
+ATP Electronics	AJ28K64E8BHE6S	K4T51083QC-ZCE6 rev C	Samsung	SJ240E08K1	10/12/05	5	Yes	(64Mx8)*18	
+Smart Modular Technologies	SG1286UDR264852MB	MT47H64M8CB-3 rev B	Micron	PG58G240LUBUB1RE rev A	11/17/05	5	Yes	(64Mx8)*16	
+Legend	L12642CF-UE1H2H2F	HY5PS12821AFP-Y5 rev A	Hynix	B62URCE rev 1	2/23/06	5	Yes	(64Mx8)*16	
+Buffalo	D2U667C-1GMBJ	MT47H64M8CB-3 rev B	Micron	2DUE28F-AA na	3/1/06	5	Yes	(64Mx8)*16	
Legacy Electronics Inc.	B516K4C2AEC-30R	K4T51083QC-ZCE6 rev C	Samsung	LE16D2FG38URE rev A	05/18/06	5	Yes	(64Mx8)*16	

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Server Board SE7230NH1-E

Unbuffered, 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
Micron	MT18HTF25672AY-40EA1	MT47H128M8BT-37E:A	Micron		11/1/05	3	Yes	(128Mx8)*18	
Qimonda	HYS72T256020HU-5-A	HYB18T1G800AF5-A	Qimonda		11/4/05	4	Yes	(128Mx8)*18	

Unbuffered, ECC, DDR2-533 DIMM Modules 2GB Sizes (256Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
+ATP Electronics	AJ56K72B8BJD5C	HYB18T1G800AF-3.7 rev A	Qimonda	SJ240B08K 2 na	11/2/05	4		(128Mx8)*18	
+Dataram	DTM63326A	HYB18T1G800AF-3.7 rev A	Qimonda	40031A rev A	12/7/05	4	Yes	(128Mx8)*18	
+Kingston	KVR533D2E4/2GI	E1108AA-5C-E rev A	Elpida	2025230-0F1.D00 na	12/13/05	4	Yes	(128Mx8)*18	
ATP Electronics	AJ56K72B8BJD5S	K4T1G084QA-ZCD5 rev A	Samsung	SJ240B08K 2 na	05/04/06	4	Yes	(128Mx8)*18	
Kingston	KVR533D2E4/2GI	HYB18T1G800AF-3.7 rev A	Qimonda	2025230-0F1.D00 na	05-Jul-06	4	Yes	(128Mx8)*18	
Apacer	75.A73A2.G00	K4T1G084QA-ZCD5 rev A	Samsung	48.18193.09 3 rev 3	7/17/06	4	Yes	(128Mx8)*18	
Dane-Elec	D2D533-072564TG	MT47H128M8BT-37E rev A	Micron	D2U72G rev 1	8/2/06	4	Yes	(128Mx8)*18	
Kingston	KVR533D2E4/2GI	E1108AB-6E-E rev B	Elpida	2025321-0F1.A00 na	11/10/06	4	Yes	(128Mx8)*18	
Kingston	KVR533D2E4/2GI	MT47H128M8HQ-3 rev E	Micron	2025321-0F1.A00 na	4/18/07	4	Yes	(128Mx8)*18	

Unbuffered, ECC, DDR2-667 DIMM Modules 2GB Sizes (256Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
Hynix	HYMP125U72AP8-Y5	HY5PS1G831FP-Y5	Hynix		9/12/05	5	Yes	(128Mx8)*18	
Samsung	M391T5663AZ3-CE6	K4T1G084QA-ZCE6	Samsung		3/2/06	5		(128Mx8)*18	
Micron	MT18HTF25672AY-667A3		Micron		3/2/06	5		(128Mx8)*18	
+Smart Modular Technologies	SG2567UDR228852 MA	MT47H128M8BT-3 rev A	Micron	PG58G240 NUBUB1RG na	3/13/06	5	Yes	(128Mx8)*18	
Smart Modular Technologies	SG2567UDR212852I A	HYB18T1G800AF-3S rev A	Qimonda	PG58G240 NUBUB1RG rev A	2/23/07	5	Yes	(128Mx8)*18	
ATP Electronics	AJ56K72G8BJE6S	K4T1G084QA-ZCE6 rev A	Samsung	SJ240G08K 1 na	3/2/07	5	Yes	(128Mx8)*18	
Avant Technology	AVF7256U61E5667F 2-MTEP	MT47H128M8HQ-3 rev E	Micron	B62URCB na	9/24/07	5	Yes	(128Mx8)*18	
TRS	TRS30321X	E1108AB-6E-E rev B	Elpida	M0540LA1 rev 1	3/6/08	5	Yes	(128Mx8)*18	
Kingston	KVR667D2E5/2GI	HY5PS1G831CFP-Y5 rev C	Hynix	2025321-0F1.A00 na	4/14/08	5	Yes	(128Mx8)*18	

**Unbuffered, ECC, DDR2-667 DIMM Modules
2GB Sizes (256Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Lead Free	DRAM Organization	EOL
Dataram	DTM63344D	HYB18T1G800C2F-3S rev C2	Qimonda	40082A rev A	11/25/08	5	Yes	128M x 8	

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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 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.hea.com/	
Qimonda	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: 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	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

Vendor Name	Web URL	Vendor Direct Sales Info
Peripheral Enhancements	http://www.peripheral.com/	
PNY	http://www.pny.com/internet_explorer/LP_B.HTML	
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
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

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 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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