



# **Intel<sup>®</sup> Server Platform SR870BN4 Memory List Test Report Summary**

Revision 42.0  
November 2007

Revision History		
Date	Rev	Modifications
Oct/03	0.5	Initial release for review.
Oct/03	1.0	Final Release
Nov/03	2.0	Added Legend 512MB part Added Infineon, Samsung & Dataram 1GB parts. (In shaded area)
Nov/03	3.0	Added Viking 256Mb and 1GB parts. Added Legend 512MB and 1GB parts. Added Smart 1GB parts. Samsung 256MB & 1G parts. (In shaded area)
Nov/03	4.0	Added TRS 512MB parts. (In shaded area)
Dec/03	5.0	Added Infineon & TRS 1GB parts. Updated "Note" regarding mix-memory support. (In shaded area)
Jan/04	6.0	Added Smart 256MB parts. Added ATP 1GB parts. (In shaded area)
Feb/04	7.0	Added Smart, Avant, Ventura, and Legend 512MB parts. Added Samsung & Micron 2G parts. Removed Micron 1G part. (In shaded area).
Feb/04	8.0	Added Legend 512MB parts. Added Smart and Ventura 1GB parts. Correction made for Samsung 1G part. New CMTL address. (In shaded area).
Mar/04	9.0	Added Legend 256MB parts. (In shaded area)
Mar/04	10.0	Added Samsung 512MB & 1GB parts. (In shaded area)
April/04	11.0	Added Micron 256MB, 512MB & 1GB parts. (In shaded area)
May/04	12.0	Added TRS 1GB and 2GB parts. Added Smart 2GB parts. (In shaded area)
Jun/04	13.0	Added Ventura, Dataram, Legend and TRS 1GB parts. Added TRS, Dataram, and Ventura 2GB parts. (In shaded area)
Jun/04	14.0	Added ATP & Samsung 512MB parts. Added Ventura and Viking 2GB parts. (In shaded area)
July/04	15.0	Added Viking 256MB and 1GB parts. Added Itaucom 512MB parts. Added Kingston 1GB parts. Added Avant 2GB parts. (In shaded area)
Aug/04	16.0	Added Viking 512MB parts. Added ATP 1GB parts. (In shaded area)
Sept/04	17.0	Added support for DDR333 modules. Added TRS 512MB parts. Added Itaucom, Smart and Dataram 1GB parts. (In shaded area)
Sep/04	18.0	Added Smart 1GB parts. (In shaded area)
Oct/04	19.0	Added Legend 512MB parts. Added Viking 1GB parts. (In shaded area)
Oct/04	20.0	Added Buffalo 512 MB part. (In shaded area)
Dec/04	21.0	Adding 4GB support to documentation. Added Samsung 4GB part. Adding Elpida 2GB part. (In shaded area)
Dec/04	22.0	Added Buffalo 1GB parts. (In shaded area)
Jan/05	23.0	Added Smart 1GB and Kingston 2GB parts. (In shaded area)
Jan/05	24.0	Added Smart 2GB parts. (In shaded area)
Feb/05	25.0	Added Infineon 512MB and 2GB parts. Added Smart and TRS 1GB parts. (In shaded area)
Mar/05	26.0	Added Dataram 512MB parts. (In shaded area)
Mar/05	27.0	Added note on Lead free modules (these modules are now in bold text). Added Smart 2GB parts. (In shaded area)
Apr/05	28.0	Added Legend 256MB parts. Added Smart and Micron 2GB parts. (In shaded area)
May/05	29.0	Updated contact information.
Aug/05	30.0	Added Micron 512MB part. Added Legacy, Hynix and Viking 1GB parts. Added Legend and TRS 2GB parts. (In shaded area)
Sept/05	31.0	Added Legacy 1GB and 2GB parts. (In shaded area)
Oct/05	32.0	Added Smart 2GB part. (In shaded area)
Oct/05	33.0	Added Legacy 1GB part. (In shaded area)
Jan/06	34.0	Added Legend 1GB part. (In shaded area)
Feb/06	35.0	Added Legend 512MB, 1GB and 2GB parts. Added Kingston 2GB parts. (In shaded area)
Mar/06	36.0	Added Smart 512MB and 1GB parts. (In shaded area)
Mar/06	37.0	Added Infineon 512MB and 1G parts. Added Samsung 1G and 2G parts. (In shaded area)
June/06	38.0	Infineon name change to Qimonda effective May 1 <sup>st</sup> , 2006. Added Smart 1G and 2G parts. (In shaded area)
Aug/06	39.0	Added Centon Electronics 512MB and 1GB parts. Added Kingston 2GB part. (In shaded area)
Apr/07	40.0	Updated vendor contact information. Added Kingston 512MB part. (In shaded area)
May/07	41.0	Additional memory parts added. (In shaded area)
Nov/07	42.0	Additional memory parts added. (In shaded area)

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The Intel® Server Platform SR870BN4 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 Platform SR870BN4. 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)<sup>1</sup>. 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 64bit 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.

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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:

Office: (949) 716-8690  
Fax (949) 716-8691

Computer Memory Test Lab (CMTL)  
24 Hammond Suite F  
Irvine, CA 92618  
<http://www.cmtlabs.com/>

## Qualified Memory for the Intel® Server Platform SR870BN4

The memory module on the Server Platform SR870BN4 has 2 memory controller boards which each has 8 DIMM sockets, which can support up to 64 GB of Registered DDR200, DDR266 or DDR333 memory using 16 72-bit DIMM modules. The following memory features are supported:

- DDR200, DDR266 and DDR333 registered ECC compatible 2.5V modules (in compliance with the DDR JEDEC DIMM Specification)
- DIMMs with capacity of 128, 256MB, 512MB, 1G, 2G and 4G. Other DRAM sizes may function correctly but will not be validated.
- Minimum configuration is 1G using four 256MB DIMMs.

The memory control Subsystem in the E8870 chip set supports memory scrubbing, single-bit error correction and multiple-bit error detection and the Intel® Single Device Data Correction feature. Memory can be implemented with either single sided (one row) or double-sided (two row) DIMMs.

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

DDR200 and DDR266 Registered DRAM Module Configurations for CAS Latency 2					
DIMM Capacity	DIMM Organization	DRAM Density	DRAM Organization	# DRAM Devices/rows/Banks	# Address bits rows/Banks/column
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	12/2/9
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	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
1GB	128M x 72	512Mbit	64M x 8	18/2/4	13/2/11
1GB	128M x 72	512Mbit	128M x 4	18/1/4	13/2/12
2GB	256M x 72	512Mbit	128M x 4	36/2/4	13/2/12
4GB	512M x 72	1Gbit	512M x 72	36/2/4	14/2/12

DDR333 Registered DRAM Module Configuration Matrix					
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	32M x 8	9/1/4	13/2/10
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
512MB	64M x 72	512Mbit	64M x 8	9/1/4	13/2/11
1GB	128M x 72	512Mbit	128M x 4	18/1/4	13/2/12
1GB	128M x 72	512Mbit	64M x 8	18/2/4	13/2/11
1GB	128M x 72	1Gbit	128M x 4	9/1/4	14/2/11
2GB	256M x 72	1Gbit	128M x 4	18/1/4	14/2/12
2GB	256M x 72	1Gbit	128M x 8	18/2/4	14/2/11
4GB	512M x 72	1Gbit	TBD	TBD	TBD

Memory features are detailed in *the Intel® Server Platform SR870BN4 Technical Product*

The following tables list DIMM devices known to be compatible with the Intel Server Platform SR870BN4. 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.

**Note:** Intel does not test all possible combinations of mixed memory modules within the same server system. Functionality issues may occur if mixed memory types are installed in the same server system. Intel recommends that memory modules of identical size, type, banking and stacking technology, and vendor are installed in each server system. Customers who choose to use mixed memory module configurations assume responsibility for ensuring that these configurations are compatible and tested

**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 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 SR870BN4*

### *Registered, ECC, DDR200 DIMM Modules 128MB Sizes (16Mx72)*

<b>Manufacturer</b>	<b>Part Number</b>	<b>DRAM Part Number</b>	<b>DRAM Vendor</b>	<b>PCB Part Number</b>	<b>Date</b>	<b>CMTL Test #</b>	<b>CAS Latency</b>	<b>Low Profile</b>	<b>DRAM Organization</b>	<b>Bank</b>
Samsung	M383L1713DTS-CA0		Samsung		8/27/02					
Micron	MT9VDDT1672G-202Z1		Micron		9/10/02					

### *Registered, ECC, DDR266 DIMM Modules 128MB Sizes (16Mx72)*

<b>Manufacturer</b>	<b>Part Number</b>	<b>DRAM Part Number</b>	<b>DRAM Vendor</b>	<b>PCB Part Number</b>	<b>Date</b>	<b>CMTL Test #</b>	<b>CAS Latency</b>	<b>Low Profile</b>	<b>DRAM Organization</b>	<b>Bank</b>

*Modules shaded in blue are low profile.*

**Modules in bold text do not contain Lead.**

(+) 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/>

~ Effective May 1st, 2006, Infineon memory products will be known as Qimonda



**Server Platform SR870BN4**  
**Registered, ECC, DDR200 DIMM Modules**  
**256MB Sizes (32Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	DRAM Organization	EOL
Samsung	M383L3310DTS-CA0		Samsung		7/22/02				
~ Qimonda (Infineon)	HYS72D32001GR-8-A		~ Qimonda (Infineon)		9/04/02				
Elpida	HB54A2569F1-10B		Elpida		9/11/02				
Micron	MT18VDDT3272G-20Z21	DRAM must be Date Code WW0210 or later	Micron		9/12/02				

**Registered, ECC, DDR266 DIMM Modules**  
**256MB Sizes (32Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	DRAM Organization	EOL
~ Qimonda (Infineon)	HYS72D32000GR-7-B		~ Qimonda (Infineon)		11/26/02				
Samsung	M312L3223ETS-CB0		Samsung		5/14/03				
Samsung	M312L3310ETS-CB0		Samsung		5/14/03				
+TRS* Tele-Radio-Space GmbH	TRS21150	HYB25D256800BT-7 rev B	~ Qimonda (Infineon)	M0529LA1 rev 1	9/4/03	2	Yes	32M x 8	
Viking	VI4CR327228DT HL1	K4H560838D-TCB0 rev D	Samsung	0000905A	10/16/03	2.5	Yes	32M x 8	
Samsung	M312L3223ETS-CA2		Samsung		11/13/03			32M x 8	
+Smart Modular Technologies	SM3272RDDR320LP-I	HYB25D256800BT-7 rev B	~ Qimonda (Infineon)	184-L13-2	12/24/03	2	Yes	32M x 8	
+Legend	L3272YC5-RU1HDC5B	HY5DU56822BT-J rev B	Hyundai	DRR1U0818-A rev 1	2/19/04	2.5	Yes	32M x 8	
Micron	MT9VDDT3272G-265G3	MT46V32M8-6T G	Micron		4/8/04	2.5	Yes	32Mx8	
+Viking	VI4CR327228DT HL4	MT46V32M8T(G)(P)-6T rev G	Micron	0000985A	6/16/04	2.5	Yes	32M x 8	
~ Qimonda (Infineon)	HYS72D32300GB R-7-C		~ Qimonda (Infineon)		9/9/04			32Mbx8	

**Registered, ECC, DDR333 DIMM Modules**  
**256MB Sizes (32Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	DRAM Organization	EOL
+Legend	L3272YC6-RU1HDC5B	HY5DU56822BT-D43 rev B	Hyundai	DRR1U0818-A rev 1	3/22/05	2.5	Yes	32M x 8	

*Modules shaded in blue are low profile.*

**Modules in bold text do not contain Lead.**

(+) 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/>

~ Effective May 1st, 2006, Infineon memory products will be known as Qimonda

**Server Platform SR870BN4**  
**Registered, ECC, DDR200 DIMM Modules**  
**512 MB Sizes (64Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	DRAM Organization	EOL
~ Qimonda (Infineon)	HYS72D64000GR-8-A	DRAM must be Date Code WW0228 or later	~ Qimonda (Infineon)		7/22/02				
Samsung	M383L6420DTS-CA0	DRAM must be Date Code WW0228 or later	Samsung		8/5/02				
Elpida	HB54A5129F1-10B		Elpida		8/13/02				

**Registered, ECC, DDR266 DIMM Modules**  
**512 MB Sizes (64Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	DRAM Organization	EOL
~ Qimonda (Infineon)	HYS72D64000GR-7-B	DRAM must be Date Code WW0228 or later	~ Qimonda (Infineon)		10/3/02				
Samsung	M383L6420DTS-CA2	DRAM must be Date Code WW0232 or later	Samsung		10/7/02				
Samsung	M312L6420ETS-CB0		Samsung		5/23/03				
Legend	L6472TC5-RR2HDC5A	HY5DU56822AT-H rev A	Hyundai	DRR720818A rev 2	9/4/03	2.5		32M x 8	
+TRS* Tele-Radio-Space GmbH	TRS21151	HYB25D256400BT-7 rev B	~ Qimonda (Infineon)	M0530LA1 rev 1	9/26/03	2	Yes	64M x 4	
+Legend	L6472TC5-RR2HDC5A	HY5DU56822AT-H rev A	Hyundai	DRR720818A rev 2	9/4/03	2.5		32M x 8	
+Legend	L6472YC5-PPASDC5D	K4H560438D-TCB0 rev D	Samsung	18-25141A rev A	10/28/03	2.5	Yes	64M x 4	
+Legend	L6472YC5-182HDD5A	HY5DU56422AT-K rev A	Hyundai	184RL rev 2	10/22/03	2.5	Yes	64M x 4	
+TRS	TRS21152	HYB25D256800BT-7 rev B	~ Qimonda (Infineon)	M0529LA1 rev 1	11/25/03	2	Yes	32M x 8	
+Smart Modular Technologies	SM6472RDDR320 LP-I	HYB25D256400BT-7 rev B	~ Qimonda (Infineon)	184-M12-2	1/08/04	2	Yes	64M x 4	
+Avant Technology	AVM7264R38C526 6K0-A	NT5DS64M4BT-75B rev B	Nanya	50-1415-01-B rev B	1/14/04	2.5	Yes	64M x 4	
+Ventura Technology Group	D52WVK25SV	K4H560838E-TCB3 rev E	Samsung	V208	1/19/04	2.5	Yes	32M x 8	
+Legend	L6472YC5-RU1HDC5B	HY5DU56822BT-J rev B	Hyundai	DRR1U0818-A rev 1	1/23/04	2.5	Yes	32M x 8	
~ Qimonda (Infineon)	HYS72D64500GR-7-B	HYB25D256400BT-7	~ Qimonda (Infineon)		3/23/04	2	Yes	64M x 4	
Micron	MT18VDDT6472G-265G3	MT46V64M4-75 G	Micron		4/8/04	2.5	Yes	64M x 4	

**Registered, ECC, DDR266 DIMM Modules  
512 MB Sizes (64Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	DRAM Organization	EOL
+ATP Electronics	AB64L72Q8S8B0S	K4H560838F-TCB3 rev F	Samsung	SB184Q08L1 rev 1	6/8/04	2.5	Yes	32M x 8	
Samsung	M312L6420FTS-CB0	K4H560438F-TCB0	Samsung		6/21/04	2.5	Yes	64M x 4	
ITAUCOM	512E2665R24	ICM4L560407-65	Micron	0269 A	6/29/04	2.5	Yes	64M x 4	
+Viking	VI4CR647228DTH L5	MT46V32M8TG(P)-6T rev G	Micron	0000985A	7/7/04	2.5	Yes	32M x 8	
+TRS	TRS21202	HYB25D256400CE-7 rev C	~ Qimonda (Infineon)	M0530LA1 rev 1	8/13/04	2	Yes	64M x 4	
~ Qimonda (Infineon)	HYS72D64300GB R-7-C		~ Qimonda (Infineon)		1/26/05		Yes	64M x 4	
+Dataram	DTM63662C	HYB25D256400CE-7 rev C	~ Qimonda (Infineon)	40581A rev A	2/24/05	2	Yes	64M x 4	
Micron	MT9VDDT6472G-265D2 Component date code: WW0510 or later.		Micron		8/05/05			64Mx8	
+Smart Modular Technologies	SG6472RDDR3H1 LPIC	HYB25D512800CE-6 rev C	~ Qimonda (Infineon)	PG52G184N EBZ6RCL rev A	2/7/06	2.5	Yes	64M x 8	
Centon Electronics	LTOP-020	V58C2256804SCI5 rev C	PROMOS	DR1G872-A	8/8/06	2.5	Yes	32M x 8	

**Registered, ECC, DDR333 DIMM Modules  
512 MB Sizes (64Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	DRAM Organization	EOL
+Legend	L6472YC6-RU1HDC5D	HY5DU56822DT-J rev D	Hyundai	DRR1U0818-A1 rev 1	9/17/04	2.5	Yes	32M x 8	
+Buffalo	DD333L-R512/MG	MT46V32M8TG(P)-6T rev G	Micron	1D188EF-AA	10/4/04	2.5	Yes	32M x 8	
+Legend	L6472YC6-RU1HDHSC	HY5DU12822CTP-J rev C	Hynix	DDR1U0818 rev A	2/3/06	2.5	Yes	64M x 8	
~ Qimonda (Infineon)	HYS72D64301HB R-6-C	HYB25D512800CF-6	~ Qimonda (Infineon)		2/6/06	2.5	Yes	64M x 8	
Kingston	KVR333S4R25/51 2I	HYB25D256400CF-5 rev C	Qimonda	2025161-001.B00 na	3/28/07	2.5	Yes	64M x 4	

*Modules shaded in blue are low profile.*

**Modules in bold text do not contain Lead.**

(+) 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/>

~ Effective May 1st, 2006, Infineon memory products will be known as Qimonda

**Server Platform SR870BN4**  
**Registered, ECC, DDR200 DIMM Modules**  
**1GB Sizes (128Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	DRAM Organization	EOL
~ Qimonda (Infineon)	HYS72D128020GR-8-A	DRAM must be Date Code WW0232 or later	~ Qimonda (Infineon)		10/8/02				
Samsung	M383L5628MT1-CA0	DRAM must be Date Code WW0241 or later	Samsung		10/18/02				
Samsung	M383L2828DT1-CA0	DRAM must be Date Code WW0228 or later	Samsung		10/21/02				
Micron	MT36VDDF12872G-265G3		Micron		4/8/04			64Mx4	

**Registered, ECC, DDR266 DIMM Modules**  
**1GB Sizes (128Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	DRAM Organization	EOL
Samsung	M312L2828ET0-CB0	DRAM must be Date Code WW0310 or later	Samsung		6/17/02				
~ Qimonda (Infineon)	HYS72D128320GBR-7-B		~ Qimonda (Infineon)		6/18/02				
Samsung	M383L2828DT1-CA2	DRAM must be Date Code WW0328 or later	Samsung		10/3/02				
Samsung	M312L2828DT0-CA2		Samsung		12/5/02				
~ Qimonda (Infineon)	HYS72D128021GR-7-B		~ Qimonda (Infineon)		12/23/02				
Elpida	EBD10RD4ABFA-7B	DRAM must be Date Code WW0333 or later	Elpida		8/26/03				
+Dataram	DTM63653B	HYB25D256400BC-7 rev B	~ Qimonda (Infineon)	40599A rev A	10/7/03	2.5	Yes	64M x 4	
+Viking	VI4CR287224DYHL1	K4H560438D-TCB0 rev D	Samsung	03-0291 rev A	11/6/03	2.5	Yes	64M x 4	
+Legend	L1272YC5-PPBSDD5D	K4H560438D-TCB0 rev D	Samsung	18-21040B rev B	10/28/03	2.5	Yes	64M x 4	
+Smart Modular Technologies	SM12872RDDR3H1LP-S	K4H510638D-TCB0 rev D	Samsung	M312L2828T0	10/14/03	2.5	Yes	64M x 4	
+Legend	L1272YC5-183HDD5A	HY5DU56422AS-H rev A	Hyundai	184RL rev 3	10/31/03	2.5	Yes	64M x 4	
Samsung	~M312L2828ET0-CA2		Samsung		11/13/03			64M x 4	
~ Qimonda (Infineon)	HYS72D128521GR-7-B	DRAM must be date codes WW0326 or later.	~ Qimonda (Infineon)		9/11/03				
+TRS	TRS21153	HYB25D256400BT-7 rev B	~ Qimonda (Infineon)	M0531LA1 rev 1	12/03/03	2	Yes	64M x 4	
+ATP Electronics	AB28L72P4SMB0S	K4H560438E-TCB0 rev E	Samsung	SB184P04L1	12/19/03	2.5	Yes	64M x 4	

**Registered, ECC, DDR266 DIMM Modules  
1GB Sizes (128Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	DRAM Organization	EOL
+Smart Modular Technologies	AM12872RDDR325	K4H560438D-TCB0 rev D	Samsung	P54G184NESZK RCN rev A	2/13/04	2.5	Yes	64M x 4	
+Ventura Technology Group	D54WPK28SV	K4H560438E-TCB0 rev E	Samsung	V213	1/29/04	2.5		64M x 4	
+Smart Modular Technologies	SM12872RDDR301BG-I	HYB25D256400BC-6 rev B	~ Qimonda (Infineon)	P54G184NESZB RCD rev A	1/27/04	2	Yes	64M x 4	
Samsung	M312L2920BTS-CB0		Samsung		3/23/04				
+TRS	TRS21171	HYB25D256400BC-7 rev B	~ Qimonda (Infineon)	M0533LA1 rev 1	4/29/04	2	Yes	64M x 4	
+Legend	L1272YC5-RU1HDH5A	HY5DU12822AT-H rev A	Hyundai	DRR1U0818-A rev 1	5/12/04	2.5	Yes	64M x 8	
+Dataram	DTM63653H	HYB25D256400BC-6 rev B	~ Qimonda (Infineon)	40599A rev A	5/18/04	2	Yes	64M x 4	
+TRS	TRS21174	HYB25D512800AT-7 rev A	~ Qimonda (Infineon)	M0529LA1 rev 1	5/10/04	2	Yes	64M x 8	
+Ventura Technology Group	D54WYK25SV	K4H510838B-TCB3 rev B	Samsung	V208	5/24/04	2.5		64M x 8	
+Viking	VI4CR287228ETHL1	MT46V64M8TG(P)-75 rev D	Micron	0000985A	6/11/04	2.5	Yes	64M x 8	
Kingston	KVR266X72RC25/1024	K4H510438B-TCB0 rev B	Samsung	2025127-001.A00	6/18/04	2.5	Yes	128M x 4	
+Viking	VI4CR287228ETHL2	MT46V64M8TG(P)-6T rev C	Micron	0000985A	7/1/04	2.5	Yes	64M x 8	
+ATP Electronics	AB28L72Q8SHB0S	K4H510838B-TCB3 rev B	Samsung	SB184Q08L1 rev 1	7/12/04	2.5	Yes	64M x 8	
+Smart Modular Technologies	SM12872RDDR301BGAS	K4H560438E-GCB3 rev E	Samsung	P54G184NESZB RCD	8/24/04	2	Yes	64M x 4	
ITAUCOM	01GE2665R24	MT46V64M4TG-75 rev C	Micron	0232 A	8/9/04	2.5	Yes	64M x 4	
+Dataram	DTM63698B	HYB25D512400BE-7 rev B	~ Qimonda (Infineon)	40581A rev A	7/30/04	2	Yes	128M x 4	
+Smart Modular Technologies	SX12872RDDR308BTIB	HYB25D512800BE-6 rev B	~ Qimonda (Infineon)	P52G184NEBZ6 RCL rev B	9/8/04	2	Yes	64M x 8	
+Smart Modular Technologies	SM12872RDDR301BGIC	HYB25D256400CC-6 rev C	~ Qimonda (Infineon)	P54G184NESZB RCD	12/23/04	2	Yes	64M x 4	
+Smart Modular Technologies	SX12872RDDR302LPB	HYB25D512400BE-7 rev B	~ Qimonda (Infineon)	P52G184NESZ6 G001 rev A	1/25/05	2	Yes	128M x 4	
+TRS	TRS21203	HYB25D512400BE-7 rev B	~ Qimonda (Infineon)	M0530LA1 rev 1	1/27/05	2	Yes	128M x 4	
Hynix	HYMD512G726B4M-H		Hynix		8/05/05			128M x 4	
	Module date code must be WW0452 or later.								

**Registered, ECC, DDR266 DIMM Modules  
1GB Sizes (128Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	DRAM Organization	EOL
+Smart Modular Technologies	SG12872RDDR3H1LPI C	HYP25D512400CE-6 rev C	~ Qimonda (Infineon)	PG52G184NESZ 6G001 rev A	2/13/06	2.5	Yes	128M x 4	
Smart Modular Technologies	SG12872RDDR308BTS C	K4H510838C-UCCC rev C	Samsung	PG52G184NEB Z6RCL rev A	05/24/06	2.5	Yes	64M x 8	
Centon Electronics	LTOP-021	K4H510838C-UCCC rev C	Samsung	DR1G872-A	8/10/06	2.5	Yes	64M x 8	

**Registered, ECC, DDR333 DIMM Modules  
1GB Sizes (128Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	DRAM Organization	EOL
+Viking	VI4CR287224DBKL2	K4H560438E-GCB3 rev E	Samsung	0000972B	9/27/04	2.5	Yes	64M x 4	
+Buffalo	DD333L-R1G/SB	K4H510838B-TCB3 rev B	Samsung	1D188EF-AA	10/11/04	2.5	Yes	64M x 8	
+Legacy Electronics Inc.	89B6MDFR-1NDG	K4H510438C-UCB3 rev C	Samsung	LE18DDT1844R RM rev B	08/16/05	2.5	Yes	128M x 4	
+Viking	VI4CR287228ETKL1	MT46V64M8TG-6T rev D	Micron	0000985A	07/29/05	2.5	Yes	64M x 8	
+Legacy Electronics Inc.	89B6MDZR-1NDG	K4H510438C-ZCB3 rev C	Samsung	LE18DDF1844R rev A	9/9/05	2.5	Yes	128M x 4	
+Legacy Electronics Inc.	89L6MDZR-1PDG	BGA128MX4DDRNC na	Legacy	LE18DDF1844R rev A	9/30/05	2.5	Yes	128M x 4	
+Legend	L1272YC6-PPXSDD2E	K4H560438E-GCB3 rev E	Samsung	DR2G472B na	1/13/06	2.5	Yes	64M x 4	
+Legend	L1272YC6-PPXSDM1B	K4H510438B-GCB3 rev B	Samsung	M312L6420G0 na	1/24/06	2.5	Yes	128M x 4	
~ Qimonda (Infineon)	HYS72D128321HBR-6-C	HYP25D512800CF-6	~ Qimonda (Infineon)		2/6/06	2.5	Yes	64M x 4	
~ Qimonda (Infineon)	HYS72D128300HBR-6-C	HYP25D512400CF-6	~ Qimonda (Infineon)		2/6/06	2.5	Yes	128M x 4	
Samsung	M312L2920CZ3-CB3	K4H510438C-ZCB3	Samsung		2/6/06	2.5	Yes	128M x 4	
Samsung	M312L2923CZ3-CB3	K4H510838C-ZCB3	Samsung		2/6/06	2.5	Yes	64M x 4	

*Modules shaded in blue are low profile.*

**Modules in bold text do not contain Lead.**

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~ Part number correction/change.

~ Effective May 1st, 2006, Infineon memory products will be known as Qimonda

**Server Platform SR870BN4**  
**Registered, ECC, DDR200 DIMM Modules**  
**2GB Sizes (256Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	DRAM Organization	EOL
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**Registered, ECC, DDR266 DIMM Modules**  
**2GB Sizes (256Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	DRAM Organization	EOL
~ Qimonda (Infineon)	HYS72D256520GR-7-A	DRAM must be Date Code WW0252 or later	~ Qimonda (Infineon)		2/25/03				
Samsung	M312L5628MT0-CB0		Samsung		6/17/03				
Elpida	EBD21RD4ABNA-7B	DRAM must be Date Code WW0328 or later	Elpida		8/22/03				
Samsung	M312L5628BT0-CB0		Samsung		12/17/03				
Micron	^MT18VDDT25672G-265A2		Micron		1/26/04				
+Smart Modular Technologies	SM25672RDDR301LP-I	HYB25D512400AT-7 rev A	~ Qimonda (Infineon)	P54G184NESZK RCN rev A	5/2/04	2	Yes	128M x 4	
+TRS	TRS21155	HYB25D512400AT-7 rev A	~ Qimonda (Infineon)	M0531LA1 rev 1	5/6/04	2	Yes	128M x 4	
+Dataram	DTM63689A	MT46V128M4FN(BN)-6 rev C	Micron	40020A rev A	5/14/04	2	Yes	128M x 4	
+Ventura Technology Group	D56WXK28SV	K4H510438B-TCB3 rev B	Samsung	V213	6/1/04	2.5		128M x 4	
+Viking	VI4CR567224EYHL3	K4H510438B-TCB3 rev B	Samsung	03-0307 rev B	6/3/04	2.5	Yes	128M x 4	
+Ventura Technology Group	D56WXK28SV	K4H510438B-TCB3 rev B	Samsung	V213	6/1/04	2.5		128M x 4	
+Avant Technology	AVM7256R83C5266K1-A	MT46V128M4TG(P)-75 rev C	Micron	50-1416-01-A rev A	6/22/04	2.5	Yes	128M x 4	
+Avant Technology	AVM7256R83C5266K1-A	MT46V128M4TG(P)-75 rev C	Micron	50-1416-01-A rev A	6/22/04	2.5	Yes	128M x 4	
+Avant Technology	AVM7256R83C5266K1-A	MT46V128M4TG(P)-75 rev C	Micron	50-1416-01-A rev A	6/22/04	2.5	Yes	128M x 4	
Elpida	EBD21RD4ADNA-7B	Module date code must be WW0439 or later.	Elpida		11/11/04				
Kingston	KVR266X72RC25/2G	K4H510438B-TCB0 rev B	Samsung	2025148-001.A00	1/6/05	2.5	Yes	128M x 4	
+Smart Modular Technologies	SX25672RDDR301LP-IB	HYB25D512400BE-7 rev B	~ Qimonda (Infineon)	P54G184NESZK RCN rev A	1/17/05	2	Yes	128M x 4	
~ Qimonda (Infineon)	HYS72D256320GBR-7-B	Component date code must be WW0420 or later.	~ Qimonda (Infineon)		1/26/05		Yes	128M x 4	
Micron	MT36VDDF25672G-265D2	Module date code must be WW0442 or later.	Micron		3/24/05		Yes	(128Mx4)*36	

**Registered, ECC, DDR266 DIMM Modules  
2GB Sizes (256Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	DRAM Organization	EOL
+TRS	TRS21218	HYB25D512400BE-7 rev B	~ Qimonda (Infineon)	M0531LA1 rev 1	08/11/05	2	Yes	128M x 4	
+Smart Modular Technologies	SG25672RDDR3H1BG SC	K4H510438C-ZCB3 rev C	Samsung	PG54G184NESZ B1RF rev A	05/09/06	2.5	Yes	128M x 4	

**Registered, ECC, DDR333 DIMM Modules  
2GB Sizes (256Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	DRAM Organization	EOL
+Smart Modular Technologies	SM25672RDDR6H2BG BI	HYB25D512400BC-6 rev B	~ Qimonda (Infineon)	184-25-2	3/2/05	2.5	Yes	128M x 4	
+Smart Modular Technologies	SM25672RDDR6H2BG AI	HYB25D512400BC-6 rev B	~ Qimonda (Infineon)	P54G184NESZB 1RF rev B	3/25/05	2.5	Yes	128M x 4	
+Legend	L2572YC6-PPXSDM5B	K4H510438B-TCB3 rev B	Samsung	18-21040B rev B	08/08/05	2.5	Yes	128M x 4	
+Legacy Electronics Inc.	8AB6MDGM-1NDG	K4H510438C-ZCB3 rev C	Samsung	LE36DDF1844R RF rev B	9/2/05	2.5	Yes	128M x 4	
+Smart Modular Technologies	SG25672RDDR6H2BG SC	K4H510438C-ZCB3 rev C	Samsung	PG54G184NESZ B1RF rev A	9/21/05	2.5	Yes	128M x 4	
+Kingston	KVR333D4R25/2GI	MT46V128M4FN-6 rev D	Micron	2025294-001.A00 na	1/20/06	2.5	Yes	(128Mx4)*36	
+Legend	L2572YC6-PPXSDMDB	K4H510438B-TCB3 rev B	Samsung	18-21040B rev B (0403)	1/26/06	2.5	Yes	(128Mx4)*36	
+Kingston	KVR333D4R25/2GI	HYB25D512400BC-6 rev B	~ Qimonda (Infineon)	2025294-001.A00	1/30/06	2.5	Yes	(128Mx4)*36	
<b>Samsung</b>	<b>M312L5720CZ3-CB3</b>	<b>K4H510438C-ZCB3</b>	<b>Samsung</b>		<b>2/6/06</b>	<b>2.5</b>	<b>Yes</b>	<b>(128Mx4)*36</b>	
Samsung	M312L5628CU0-CB0	K4H1G0638C-UCB0	Samsung		2/12/06	2.5	Yes	(256Mbx4)*36	
+Kingston	KVR333D4R25/2GI	K4H510438C-ZCB3 rev C	Samsung	2025294-001.A00 na	8/4/06	2.5	Yes	(128Mx4)*36	
Kingston	KVR333D4R25/2GI	HYB25D512400CF-5 rev C	Qimonda	2025294-001.A00 na	4/23/07	2.5	Yes	(128Mx4)*36	
Kingston	KVR333D4R25/2GI	HYB25D512400BF-5 rev B	Qimonda	2025294-001.A00 na	10/8/07	2.5	Yes	(128Mx4)*36	

*Modules shaded in blue are low profile.*

*Modules in bold text do not contain Lead.*

(+) 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/>

(^) This part requires –A14986-500 or later memory board.

~ Effective May 1st, 2006, Infineon memory products will be known as Qimonda



## *Server Platform SR870BN4*

### **Registered, ECC, DDR266 DIMM Modules 4GB Sizes (512Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	DRAM Organization	EOL
Samsung	<b>^ M312L5128MT0-CB0</b>	K4H2G0638M-TCB0 (Component date code must be WW0440 or later.)	Samsung		11/24/04	2.5	Yes	(128Mx4)*36	

### **Registered, ECC, DDR333 DIMM Modules 4GB Sizes (512Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	DRAM Organization	EOL

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(^) This part requires –A14986-500 or later memory board.

~ Effective May 1st, 2006, Infineon memory products will be known as Qimonda

## Sales Information

Vendor Name	Web URL	Vendor Direct Sales Info
ATP Electronics	<a href="http://www.atpinc.com/">http://www.atpinc.com/</a>	Tel (1) 408-732-5000, ext 5858 Fax 408-732-5893 <a href="mailto:sales@atpusa.com">sales@atpusa.com</a>
ATP Electronics -- Taiwan Inc.	<a href="http://www.atpinc.com/">http://www.atpinc.com/</a>	Tel 011-886-2-2659-6368 Fax 886-2-2659-4982
Avant Technology	<a href="http://www.avanttechnology.com">http://www.avanttechnology.com</a>	Brad Scoggins Phone: (512)491-7411 Fax: (512)491-7412 <a href="mailto:brads@avanttechnology.com">brads@avanttechnology.com</a>
Aved Memory Products	<a href="http://www.avedmemory.com/">http://www.avedmemory.com/</a>	
Buffalo Technology	<a href="http://www.buffalotech.com/">http://www.buffalotech.com/</a>	(800) 967-0959 <a href="mailto:memory@buffalotech.com">memory@buffalotech.com</a>
Centon Electronics	<a href="http://www.centon.com">http://www.centon.com</a>	Tel: 949-855-9111 Fax: 949-855-6035
Corsair	<a href="http://www.corsairmicro.com/">http://www.corsairmicro.com/</a>	Tel: 510-657-8747 Fax: 510-657-8748
Dane-Elec	<a href="http://www.dane-memory.com/">http://www.dane-memory.com/</a>	Michal Hassan @ (949)450-2941 or email @ <a href="mailto:Michal@Dane-memory.com">Michal@Dane-memory.com</a>
Dataram	<a href="http://www.dataram.com/">http://www.dataram.com/</a>	Paul Henke, 800-328-2726 x2239 in USA 609-799-0071 <a href="mailto:phenke@dataram.com">phenke@dataram.com</a>
GoldenRAM	<a href="http://www.goldenram.com">http://www.goldenram.com</a>	Jason M. Barrette @ 800-222-861 x7546 <a href="mailto:jasonb@goldenram.com">jasonb@goldenram.com</a> or Michael E. Meyer @800-222-8861 x7512 <a href="mailto:michaelm@goldenram.com">michaelm@goldenram.com</a>
Hitachi	<a href="http://semiconductor.hitachi.com/pointer/">http://semiconductor.hitachi.com/pointer/</a>	
Hyundai/Hynix Semiconductor	<a href="http://www.he.com/">http://www.he.com/</a>	
Infineon	<a href="http://www.infineon.com/business/distribut/index.htm">http://www.infineon.com/business/distribut/index.htm</a>	
ITAUCOM	<a href="http://www.itauc.com.br">http://www.itauc.com.br</a>	
JITCO CO LTD	<a href="http://www.jitco.net/">http://www.jitco.net/</a>	Seong Jeon Tel: 82-32-817-9740 <a href="mailto:s.jeon@jitco.net">s.jeon@jitco.net</a>
Kingston	<a href="http://www.kingston.com">http://www.kingston.com</a>	US.- Call (877) 435-8726 Asia – Call 886-3-564-1539 Europe – Call +44-1932-755205
Legacy Electronics Inc.	<a href="http://www.legacyelectronics.com">http://www.legacyelectronics.com</a>	U.S. Contact: Gary Ridenour, 949-498-9600, Ext 350 European Contact: 49 89 370 664 11
Legend	<a href="http://www.legend.com.au">http://www.legend.com.au</a>	
Micron	<a href="http://silicon.micron.com/mktg/">http://silicon.micron.com/mktg/</a> <a href="http://silicon.micron.com/mktg/mbqual/qual_data.cfm">http://silicon.micron.com/mktg/mbqual/qual_data.cfm</a>	
MSC Vertriebs GmbH	<a href="http://www.msc-ge.com">http://www.msc-ge.com</a>	William Perrigo 49-7249-910-417 Fax: 49-7249-910-229 <a href="mailto:wpe@msc-ge.com">wpe@msc-ge.com</a>

<b>Vendor Name</b>	<b>Web URL</b>	<b>Vendor Direct Sales Info</b>
<b>Netlist, Inc</b>	<a href="http://www.netlistinc.com">http://www.netlistinc.com</a>	Christopher Lopes 949.435.0025 tel 949.435.0031 fax <a href="mailto:sales@netlistinc.com">sales@netlistinc.com</a>
<b>Peripheral Enhancements</b>	<a href="http://www.peripheral.com/">http://www.peripheral.com/</a>	
<b>Samsung</b>	<a href="http://www.korea.samsungsemi.com/locate/buy/list_na.html">http://www.korea.samsungsemi.com/locate/buy/list_na.html</a>	For US customers go to: <a href="http://www.mymemorystore.com/">http://www.mymemorystore.com/</a>
<b>Silicon Tech</b>	<a href="http://www.silicotech.com/contact/salescontacts.shtml">http://www.silicotech.com/contact/salescontacts.shtml</a>	
<b>Simple Tech</b>	<a href="http://www.simpletech.com">http://www.simpletech.com</a>	Ron Darwish @ (949) 260-8230 or email @ <a href="mailto:Rdarwish@Simpletech.com">Rdarwish@Simpletech.com</a>
<b>SMART Modular Technologies</b>	<a href="http://www.smartm.com/channel">http://www.smartm.com/channel</a>	Gene Patino (949) 439-6167 <a href="mailto:Gene.Patino@Smartm.com">Gene.Patino@Smartm.com</a>
<b>Swissbit</b>	<a href="http://www.swissbit.com">http://www.swissbit.com</a>	Tony Cerreta Tel: 914-935-1400 x240 Fax: 914-935-9865 <a href="mailto:tony.cerreta@swissbitna.com">tony.cerreta@swissbitna.com</a>
<b>TechnoLinc Corporation</b>	<a href="http://www.technolinc.com">http://www.technolinc.com</a>	David Curtis 510-445-7400 <a href="mailto:davidc@technolinc.com">davidc@technolinc.com</a>
<b>TRS* Tele-Radio-Space GmbH</b>	<a href="http://www.certified-memory.com">http://www.certified-memory.com</a> <a href="http://www.certified-memory.de">http://www.certified-memory.de</a>	Vendor Direct Sales Info: Andreas Gründl, Pho.: +49(0)89/94553234, Fax.: +49(0)89/94553293, <a href="mailto:agruendl@trs-space.de">agruendl@trs-space.de</a>
<b>Unigen</b>	<a href="http://www.unigen.com">http://www.unigen.com</a>	
<b>Ventura Technology Inc</b>	<a href="http://www.venturatech.com">http://www.venturatech.com</a>	Sam Lewis 760 724-8700 ext. 103
<b>Viking InterWorks</b>	<a href="http://www.vikinginterworks.com">http://www.vikinginterworks.com</a>	Adrian Proctor Tel: 949-643-7255 <a href="mailto:adrian.proctor@sanmina-sci.com">adrian.proctor@sanmina-sci.com</a>
<b>Virtium Technology Inc</b>	<a href="http://www.virtium.com">http://www.virtium.com</a>	Tod Skelton @ (949) 460-0020 ext. 146 or email @ <a href="mailto:tod.skelton@virtium.com">tod.skelton@virtium.com</a>
<b>Wintec Industries</b>	<a href="http://www.wintecindustries.com">http://www.wintecindustries.com</a>	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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