Intel® Server Board S815EBM1
Memory List Test Report Summary

Revision 34.0
September 2003

Revision History		
Date	**Rev**	**Modifications**
June/01	0.5	Initial post-launch release for review.
August/01	1.0	Added Goldenram 64MB and Dataram 256MB parts. (In shaded area)
Sept./01	2.0	Added Aved 128mb, Dataram 256mb, Dane Elec 64mb parts. Added Samsung 64MB, 128MB & 256MB parts. Added Micron 64MB & 128MB parts. (In shaded area) Updated verbiage and added tables to include PC100 parts. Added sales information.
Oct./01	3.0	Added Aved 256mb part. Added Dataram 512mb and 128mb, Aved 512mb, PNY 128mb parts. Added Goldenram 64MB, 128MB, 256MB & 512MB parts. Added PNY 256MB part. Added Aved 128MB part. Added PNY to the Sales contact information. (In shaded area)
Oct./01	4.0	Added PNY 256MB and 512MB parts. (In shaded area)
Nov./01	5.0	Added Viking 256MB and 512MB parts. (In shaded area)
Dec./01	6.0	Added Viking 128MB part. (In shaded area) Correction made in product description from 3.3v registered to Unbuffered.
Jan./02	7.0	Added Dataram 512MB parts. (In shaded area)
Feb./02	8.0	Added Virtium 256MB parts. (In shaded area)
Feb./02	9.0	Added Aved 128MB part. (In shaded area)
Mar./02	10.0	Added Aved 256MB part. (In shaded area)
April/02	11.0	Updated Dataram part numbers. (~ Noted with this symbol)
April/02	12.0	Added Dataram 512MB parts. (In shaded area)
May/02	13.0	Added MSC 128MB parts. (In shaded area)
May/02	14.0	Added MSC 128MB & 256MB parts. (In shaded area)
June/02	15.0	Added MSC 128MB parts. (In shaded area)
June/02	16.0	Added Aved 128MB parts. Added Buffalo 128MB parts. (In shaded area)
July/02	17.0	Added Dataram 128MB parts. (In shaded area)
July/02	18.0	Added Buffalo 256MB parts. Added Smart Modular 128MB parts. (In shaded area)
Aug/02	19.0	Added Buffalo 256MB & 512MB parts. (In shaded area)
Aug/02	20.0	Added Dataram 256MB parts. Added Buffalo 512MB parts (In shaded area).
Sept/02	21.0	Added Buffalo 512MB parts. Added MSC 128MB & 512MB parts. (In shaded area)
Sept/02	22.0	Added Dataram 512MB parts. (In shaded area)
Oct/02	23.0	Added Smart 256MB parts. Added Aved 512MB parts. Added Dataram 512MB parts. (In shaded area)
Oct/02	24.0	Added Avant, Buffalo & Smart Modular 512MB parts. Added Dataram 128MB parts. (In shaded area)
Oct/02	25.0	Added Avant, Buffalo & MSC 256MB parts. Added Avant 512MB parts. (In shaded area)
Nov/02	26.0	Added Buffalo & MSC 256MB parts. (In shaded area)
Dec/02	27.0	Added Buffalo 128MB & 256MB parts. (In shaded area)
Jan/03	28.0	Added Buffalo 512MB parts. (In shaded area)
Jan/03	29.0	Added Avant 128MB parts. (In shaded area)
Apr/03	30.0	Updated EOL Status
Jun/03	31.0	Updated EOL Status
July/03	32.0	Updated EOL Status
Aug/03	33.0	Updated EOL Status
Sept/03	34.0	Added Viking 12MB parts. (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 Server Board S815EBM1 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.

* Other brands and names are the property of their respective owners.

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 S815EBM1. 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.

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[1] CMTL is an independent memory testing organization responsible for testing a broad range of memory products. Receiving a "PASS" after being tested by CMTL, means that a product functions correctly and consumers can use it to perform the intended server functions. In order to pass these stringent standards, memory products must maintain the highest manufacturing procedures and pass an exacting battery of tests. Testing is performed with equipment and a procedure as defined by Intel's various functional testing levels. CMTL contact:

John Deters	Computer Memory Test Lab (CMTL)
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 Intel® Server Board S815EBM1

The memory module on the server board S815EBM1 has 3 DIMM sockets, which can hold up to 512 MB of unbuffered non-ECC PC100 & PC133 memory using three 72-bit DIMM modules. The following memory features are supported:

- 133 MHz, Unbuffered non-ECC PC100/PC133 compatible 3.3V unbuffered SDRAM modules (in compliance with the PC SDRAM Unbuffered DIMM Specification)
- DIMMs with capacity of 32MB, 64MB, 128MB, 256MB & 512MB. Other DRAM sizes may function correctly but will not be validated.
- Minimum configuration is 32MB using one 32MB DIMM.

Unbuffered Single- or double-sided DIMMs with the following configurations:

DIMM Capacity	Number of Sides	SDRAM Density	SDRAM Organization Front-side/Back-side	Number of SDRAM devices
32 MB	DS	16 Mbit	2 M X 8 / 2 M X 8	16 (Note 1)
32 MB	SS	64 Mbit	4 M X 16 / empty	4
48 MB	DS	64 / 16 Mbit	4 M X 16 / 2 M X 8	12 (Notes 1 and 2)
64 MB	DS	64 Mbit	4 M X 16 / 4 M X 16	8
64 MB	DS	64 Mbit	8 M X 8 /empty	8
64 MB	SS	128 Mbit	8 M X 16 / empty	4
96 MB	DS	64 Mbit	8 M X 8 / 4 M X 16	12 (Notes 1 and 2)
96 MB	DS	128 / 64 Mbit	8 M X 16 / 4 M X 16	8 (Notes 1 and 2)
128 MB	DS	64 Mbit	8 M X 8 / 8 M X 8	16 (Note 1)
128 MB	DS	128 Mbit	8 M X 16 / 8 M X 16	8 (Notes 1 and 2)
128 MB	SS	128 Mbit	16 M X 8 / empty	8
128 MB	SS	256 Mbit	16 M X 16 /empty	4
192 MB	DS	128 Mbit	16 M X 8 / 8 M X 16	12 (Notes 1 and 2)
192 MB	DS	128 / 64 Mbit	16 M X 8 / 8 M X 8	16 (Notes 1 and 2)
256 MB	DS	128 Mbit	16 M X 8 / 16 M X 8	16 (Notes 1 and 2)
256 MB	DS	256 Mbit	16 M X 16 / 16 M X 16	8 (Notes 1 and 2)
256 MB	SS	256 Mbit	32 M X 8 / empty	8
512 MB	DS	256 Mbit	32 M X 8 / 32 M X 8	16 (Notes 1 and 2)

Memory features are detailed in *the Intel® Server Board S815EBM1 Technical Product Specification* available on-line at http://support.intel.com/support/motherboards/server/S815EBM1/

The following tables list DIMM devices known to be compatible with the Intel Server Board S815EBM1. 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 S815EBM1

Unbuffered, non-ECC, 100MHz SDRAM DIMM Modules
64MB Sizes (8Mx64)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	EOL
Micron	MT4LSDT864AG-10EB1	MT48LC8M16A2TG	Micron		6/28/01	2		

Unbuffered, non-ECC, 133MHz SDRAM DIMM Modules
64MB Sizes (8Mx64)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	EOL
+Dane-Elec	DP133-064083AL	NT56V6610C0T-75	Nanya	DE082018 rev B	9/7/01	3		EOL
Micron	MT4LSDT864AG-13EB1	MT48LC8M16A2TG	Micron		8/28/01	2		
Samsung	M366S0924DTS-C7A	K4S281632D-TC75	Samsung		8/2/01	3		
+GoldenRAM	7550310-GR	MT48LC8M8A2TG-75 rev A	Micron	105506-001A rev A	9/24/01	3		EOL

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	EOL
+GoldenRAM	7550410-GR	MT48LC8M8A2TG-75 rev A	Micron	105506-001A rev A	08/30/01	3		EOL

Server Board S815EBM1

Unbuffered, non-ECC, 100MHz SDRAM DIMM Modules
128MB Sizes (16Mx64)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	EOL
Micron	MT4LSDT1664AG-10EB1	MT48LC16M16A2TG	Micron		8/28/01	2		
Micron	MT4LSDT1664AG-133B1	MT48LC16M16A2TG	Micron		6/28/01	3		
Samsung	M366S1723DTU-C7A	K4S280832D-TC75	Samsung		7/23/01	3		
+PNY	6416ZHSEM4G09TWN-PK0	TC59SM708AFT-75 rev A	Toshiba	40000387 rev A	9/20/01	3		EOL
+Aved Memory Products	AMP366P1723ATE-C7B/MI	MT48LC16M8A2TG-7E rev B	Micron	105500 rev A	9/25/01	2	Yes	EOL

Unbuffered, non-ECC, 133MHz SDRAM DIMM Modules
128MB Sizes (16Mx64)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	EOL
+GoldenRAM	7550320-GR	MT48LC8M8A2TG-75 rev A	Micron	105506-001A rev A	9/27/01	3		EOL
+Aved Memory Products	AMP366P1723DTE-C75/S	K4S280832D-TC75 rev D	Samsung	105500 rev A	2/2/02	3		EOL
+MSC Vertriebs GmbH	MSC128M00016	HY57V28820AT-H rev A	Hyundai	M0442LA2	4/26/02	3	Yes	EOL
+MSC Vertriebs GmbH	MSC128M00012	MT48LC16M8A2TG-75 rev A	Micron	M0442LA2	5/22/02	3	Yes	EOL
+MSC Vertriebs GmbH	MSC128M00008	HYB39S128800CT-7.5 rev C	Infineon	M0442LA2	5/31/02	3	Yes	EOL
+Aved Memory Products	AMP366P1723CTC-C75/N	NT5SV16M8CT-7K rev C	Nanya	GR-50030 rev A	6/10/02	3	Yes	EOL
+Dataram	DTM60143B	HY57V28820HCT-H rev C	Hyundai	40545 rev A	6/28/02	3		EOL
+Smart Modular Technologies	SM1664S1301-ICB	NT5SV16M8CT-7K	Nanya	P528168NVBS6G1A revA	7/13/02	3		EOL
+MSC Vertriebs GmbH	MSC128M00004	K4S280832C-TC75 rev C	Samsung	M0442LA2	8/29/02	3	Yes	
+Dataram	DTM60143C	MT48LC16M8A2TG-75 rev E	Micron	40545 rev A	7/23/02	3		EOL
+Buffalo	VS133-S128/ME	48LC16M8A2 rev E	Micron	PC88I11-AB	12/2/02	3		

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	EOL
+Aved Memory Products	AMP366P1723CTE-C75/S	K4S280832C-TC75 rev C	Samsung	105500 rev A	9/7/01	3		EOL
+Dataram	~DTM68019A (Old Part# DTM60140(68019Z)(Y))	HY57V28820AT-K	Hyundai	650769-G1 rev 1.0	9/20/01	3		EOL
+GoldenRAM	7550420-GR	MT48LC8M8A2TG-75 rev A	Micron	105506-001A rev A	10/4/01	3		EOL
+Viking	INT12831	NT5SV16M8CT-7K rev K	Nanya	9001702	12/7/01	2		EOL
+Buffalo	VS133-ES128/ME	48LC16M8A2-75 rev E	Micron	PC88I11-AB	6/20/02	3		EOL
+Avant Technology	AVE7216U36A3133E3-A	HY57V28820HCT-H rev C	Hyundai	50-1232-01B rev B	12/31/02	3	Yes	
+Viking	VI8AU167238CTEL1	MT48LC16M8A2TG-75E rev E	Micron	0000800B	8/11/03	3	Yes	

Modules shaded in blue are low profile

(+) This vendor is part of the CMTL Certification program. This means this part has/will been 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 S815EBM1

Unbuffered, non-ECC, 133MHz SDRAM DIMM Modules
256MB Sizes (32Mx64)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	EOL
+Dataram	DTM60144 (68017Z)	HY57V28820HCT-H	Hyundai	650769-G1 rev 1.0	9/5/01	3		EOL
Samsung	M366S3253CTU-C7A	K4S560832C-TC75	Samsung		7/23/01	3		
+Aved Memory Products	AMP366P3323ATE-C75/MV	V54C3128804VAT-7 rev A	Mosel-Vitelic	105500 rev A	9/11/01	3	Yes	EOL
+PNY	6432ZHSEM4G17TWN-PK0	TC59SM708AFT-75 rev A	Toshiba	40000387 rev A	9/24/01	3		EOL
+PNY	6432ZHSEM4G17TWN-PH0	HYB39S128800CT-7.5 rev C	Infineon	40000387 rev A	9/24/01	3		EOL
+Viking	INT25635	HM5225805BTT75 rev B	Hitachi	9001702	11/01/01	3		EOL
+Aved Memory Products	AMP366P3323DTE-C75/S	K4S280832D-TC75 rev D	Samsung	105550 rev A	2/18/02	3		EOL
+MSC Vertriebs GmbH	MSC256M00013	MT48LC16M8A2TG-75 rev A	Micron	M0442LA2	5/15/02	3	Yes	EOL
+MSC Vertriebs GmbH	MSC256M00017	HY57V28820AT-H rev A	Hyundai	M0442LA2	5/20/02	3	Yes	EOL
+Buffalo	VS133-256/ME	48LC16M8A2-75 rev E	Micron	PC88I11-AB	7/9/02	3		EOL
+Dataram	DTM68016B	MT48LC16M8A2TG-75 rev E	Micron	40545 rev A	8/7/02	3		EOL
+Smart Modular Technologies	GM3264S1301-SV	4M84NTPC133	VSSBURST	B6986RA	9/27/02	2	Yes	EOL
+Avant Technology	AVE6432U36A2133E3-A	NT5SV16M8CT-7K rev C	Nanya	50-1232-01 rev B	10/16/02	2	Yes	
+Buffalo	VS133-S256/SD	K4S560832D-TC75 rev D	Samsung	5SZ8VEF-AA	10/24/02	3		
+MSC Vertriebs GmbH	MSC256M00010	HYB39S256800CT-7.5 rev C	Infineon	M0442LA2	10/21/02	3	Yes	EOL
+Buffalo	VS133-256/SD	K4S280832D-TC75 rev D	Samsung	PC88I11-AB	11/4/02	3		
+MSC Vertriebs GmbH	MSC256M00009	HYB39S128800CT-7.5 rev C	Infineon	M0442LA2	10/30/02	3	Yes	EOL
+Buffalo	VS133-S256/MB	48LC32M8A2 rev B	Micron	5SZ8VEF-AA	11/18/02	3		

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	EOL
+Dataram	DTM60141 (68016Z)	HY57V28820HCT-H	Hyundai	650769-G1 rev 1.0	08/30/01	3		EOL
+PNY	7232ZHSEM4G19TWN-PH0	HYB39S128800CT-7.5 rev C	Infineon	40000387 rev A	10/4/01	3		EOL
+GoldenRAM	7550430-GR	MT48LC16M8A2TG-75 rev A	Micron	105506-001A rev A	10/4/01	3		EOL
+PNY	7232ZHSEM4G19TWN-PK0	TC59SM708AFT-75 rev A	Toshiba	40000387 rev A	10/06/01	3		EOL

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	EOL
Virtium Technology Inc.	VM366S3353-GAS	K4S560832A-TC75 rev A	Samsung	168-167203C-9E rev C	1/25/02	3	Yes	EOL
+Buffalo	VS133-E256/ME	48LC16M8A2-75 rev E	Micron	PC88I11-AB	8/1/02	3		EOL
+Dataram	DTM68017B	MT48LC16M8A2TG-75 rev E	Micron	40545 rev A	8/12/02	3		
+Buffalo	VS133-ES256/SD	K4S560832D-TC75 rev D	Samsung	5SZ8VEF-AA	11/8/02	3		
+Buffalo	VS133-E256/SD	K4S280832D-TC75 rev D	Samsung	PC88I11-AB	11/25/02	3		

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Unbuffered, non-ECC, 133MHz SDRAM DIMM Modules
512MB Sizes (32Mx64)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	EOL
+Dataram	DTM60145 (68018Z)(Y)	HY57V56820T-H	Hyundai	650769-G1 rev 3	9/19/01	3		EOL
+Aved Memory Products	AMP366P6453BT1-C75/S	K4S560832B-TC75 rev B	Samsung	105500 rev A	9/21/01	3	Yes	EOL
+PNY	6464WHSEM8G17TWN-PK0	TC59SM808BFT-75 rev B	Toshiba	40000387 rev A	10/06/01	3		EOL
+PNY	6464WHSEM8G17TWN-PH0	HYB39S256800CT-7.5 rev C	Infineon	40000387 rev A	10/06/01	3		EOL
+Viking	INT51218	HM5225805BTT75	Hitachi	9001702	11/01/01	2		EOL
+Dataram	DTM60145 (68018Z)(Y)	HY57V56820T-HP	Hyundai	650769-G1 rev 1	1/10/02	3		EOL
+Dataram	DTM68018A (OldPart#DTM60145 (68018Z)(M))	MT48LC32M8A2TG-75 rev B	Micron	40545 (650769-G) rev A (1)	4/11/02	3		EOL
+Buffalo	VS133-512/SD	K4S560832C-TC75 rev C	Samsung	5SZ8VEF-AA	7/29/02	3		EOL
+MSC Vertriebs GmbH	MSC512M00007	K4S560832C-TC75 rev C	Samsung	M0442LA2	8/22/02	3	Yes	
+Dataram	DTM68018B	HY57V56820BT-H rev B	Hyundai	40545 rev A	9/3/02	3		
+Dataram	DTM68018E	MT48LC32M8A2TG-75 rev C	Micron	40545 rev A	9/11/02	3		
+GoldenRAM	7550440-GR	K4S560832B-TC75 rev B	Samsung	105506-001A rev A	9/29/01	3		EOL
+PNY	7264WHSEM8G19TWN-PH0	HYB39S256800CT-7.5 rev C	Infineon	40000387 rev A	10/25/01	3		EOL
+Dataram	DTM60142 (68024Z)(Y)	HY57V56820T-HP	Hyundai	650769-G1 rev 1	1/10/02	3		EOL
+Buffalo	VS133-E512/SD	K4S560832C-TC75 rev C	Samsung	5SZ8VEF-AA	8/19/02	3		EOL

Unbuffered, ECC, 133MHz SDRAM DIMM Modules
512MB Sizes (32Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	Low Profile	EOL
+Buffalo	VS133-E512/SD	K4S560832C-TC75 rev C	Samsung	5SZ8VEF-AA	8/19/02	3		
+Dataram	DTM68024B	HY57V56820BT-H rev B	Hyundai	40545 rev A	9/9/02	3		
+Dataram	DTM68024D	MT48LC32M8A2TG-75 rev C	Micron	40545 rev A	9/16/02	3		
+Dataram	DTM68018E	MT48LC32M8A2TG-75 rev C	Micron	40545 rev A	9/11/02	3		
+Aved Memory Products	AMP366P6453ATE-C75/N	NT5SV32M8AT-7K rev A	Nanya	105500 rev A	9/19/02	3	Yes	
+Avant Technology	AVE6464U39A2133E3-A	NT5SV32M8AT-7K rev A	Nanya	50-1232-01 rev B	10/14/02	2	Yes	
+Buffalo	VS133-512/SD	K4S560832D-TC75 rev D	Samsung	5SZ8VEF-AA	10/7/02	3		
+Smart Modular Technologies	SM6464S1301-ICA	K4S560832B-TC75	Samsung	P512168NVB S6GOX rev A	10/2/02	3		
+Avant Technology	AVE6464U39A2133E3-A	NT5SV32M8AT-7K rev A	Nanya	50-1232-01 rev B	10/14/02	2	Yes	
+Buffalo	VS133-512/MC	MT48LC32M8A2-75 rev C	Micron	5SZ8VEF-AA	12/16/02	3		

Modules shaded in blue are low profile

(+) This vendor is part of the CMTL Certification program. This means this part has/will been 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.*

Sales Information

Vendor Name	Web URL	Vendor Direct Sales Info
ATP Electronics	http://www.atpusa.com/	Florence Hsieh Tel 408-732-5831 Fax 408-732-5055 sales@atpusa.com
ATP Electronics -- Taiwan Inc.	http://www.atpusa.com/	Patty Kuo Tel 011-886-2-2659-6368 Fax 886-2-2659-4982
Avant Technology	http://www.avanttechnology.com	Brad Scoggins Phone: (512)491-7411 Fax: (512)491-7412 brads@avanttechnology.com
Aved Memory Products	http://www.avedmemory.com/	
Buffalo Technology	http://www.buffalotech.com/	(800) 967-0959 memory@buffalotech.com
Centon Electronics	http://www.centon.com	Tel: 949-855-9111 Fax: 949-855-6035
Corsair	http://www.corsairmicro.com/	Tel: 510-657-8747 Fax: 510-657-8748
Dane-Elec	http://www.dane-memory.com/	Michal Hassan @ (949)450-2941 or email @ Michal@Dane-memory.com
Dataram	http://www.dataram.com/	Robert Olszak @ 800-822-0071 ext. 2404
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/	
Infineon	http://www.infineon.com/business/distribut/index.htm	
ITAUCOM	http://www.itaucom.com.br	
JITCO CO LTD	http://www.jitco.net/	Seong Jeon Tel: 82-32-817-9740 s.jeon@jitco.net
Kingston	http://www.kingston.com	US.- Call (877) 435-8726 Asia – Call 886-3-564-1539 Europe – Call +44-1932-755205
Legacy Electronics Inc.	http://www.legacyelectronics.com	
Legend	http://www.legend.com.au	
Micron	http://silicon.micron.com/mktg/'http://silicon.micron.com/mktg/mbqual/qual_data.cfm	
MSC Vertriebs GmbH	http://www.msc-ge.com	William Perrigo 49-7249-910-417 Fax: 49-7249-910-229 wpe@msc-ge.com
Netlist, Inc	http://www.netlistinc.com	Christopher Lopes 949.435.0025 tel 949.435.0031 fax sales@netlistinc.com
Peripheral Enhancements	http://www.peripheral.com/	
PNY	http://www.pny.com/internet_explorer/LPB.HTML	

Vendor Name	Web URL	Vendor Direct Sales Info
Samsung	http://www.korea.samsungsemi.com/locate/buy/list_na.html	For US customers go to: http://www.mymemorystore.com/
Silicon Tech	http://www.silicontech.com/contact/salescontacts.shtml	
Simple Tech	http://www.simpletech.com	Ron Darwish @ (949) 260-8230 or email @ Rdarwish@Simpletech.com
SMART Modular Technologies	http://www.smartm.com	Leo Alafriz 949-753-0116 ext. 125 leo.alafriz@smartm.com
TechnoLinc Corporation	http://www.technolinc.com	David Curtis 510-445-7400 davidc@technolinc.com
TRS	http://www.certified-memory.com	William Perrigo 49-7249-910-417 Fax: 49-7249-910-229 wpe@msc-ge.com
Unigen	http://www.unigen.com	
Ventura Technology Inc	http://www.venturatech.com	Don Hummel @ 805-581-0800 x 108 or email @ don@venturatech.com
Viking InterWorks	http://www.vikinginterworks.com	
Virtium Technology Inc	http://www.virtium.com	Tod Skelton @ (949) 460-0020 ext. 146 or email @ tod.skelton@virtium.com
Legend	http://www.legend.com.au	Tel: 800-338-2361 Fax: 949-459-8577 orderdesk@vikingcomponents.com
Wintec Industries	http://www.wintecindustries.com	Tel 510-770-9239 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 Pentium® III 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.