



# **Intel® C440GX+ Server Board Memory List Test Report Summary**



*Revision 64.0  
October 2001*

<b>Revision History</b>		
<b>Date</b>	<b>Rev</b>	<b>Modifications</b>
Jan/99	.05	Initial release
April/99	1.0	Release version. Added registered DIMM modules
May/99	2.0	Part number correction. Added new qualified part.
May/99	3.0	Added new qualified part.
June/99	4.0	Added new qualified part.
June/99	5.0	Added new qualified part.
June/99	6.0	Added new qualified part.
July/99	7.0	Added new qualified part.
July/99	8.0	Added new qualified part.
July/99	9.0	Removed Micron 128MB Registered part.
Sept/99	10.0	Added new qualified part.
Sept/99	11.0	Added DRAM & PCB part numbers. Added new qualified parts.
Oct/99	12.0	Added new qualified parts. (In shaded area) Added DRAM Vendor.
Nov/99	13.0	Added new qualified part. (In shaded area)
Nov/99	14.0	Added new qualified part. (In shaded area). Add column to identify product that is end of life (EOL)
Nov/99	15.0	Correction made on Viking 512MB from Unbuffered to Registered. Added new qualified part. (In shaded area).
Dec/99	16.0	Added new qualified part. (In shaded area).
Dec/99	17.0	Part number changes on Samsung parts. Added new qualified part. (In shaded area). Add distributor information.
Jan/00	18.0	Added new qualified part. (In shaded area). Add distributor information.
Jan/00	19.0	Added new qualified part. (In shaded area). Added Old & New part numbers for Samsung. Updated distributor information.
Feb/00	20.0	Added Viking 128MB, Dane Elec 128MB & GoldenRAM 265MB parts. (In shaded area). Added caution for using stacked DRAM parts.
Feb/00	21.0	Added Viking 128MB & 256MB part. Added Dane Elec 128MB part. Added Legend 256MB part. Added DataRam 512MB part. (In shaded area). Correction for Samsung part numbers. Corrected verbiage for the 256Mb parts.
Feb/00	22.0	Added Viking 256MB. Added Dane Elec 128MB part. (In shaded area).
Mar/00	23.0	Added Dane Elec 128MB parts. (In shaded area).
Mar/00	24.0	Added Advantage Memory 512MB part. Part number updates for Samsung. (In shaded area).
May/00	25.0	Added Admor Memory LLC 256MB part. (In shaded area).
May/00	26.0	Added DataRam 256MB part. (In shaded area).
May/00	27.0	Added DataRam 128MB part. (In shaded area).

<b>Revision History-Continued</b>		
<b>Date</b>	<b>Rev</b>	<b>Modifications</b>
June/00	28.0	Added two Dane Elec 128MB part. Added distributor information for Admor Memory LLC. (In shaded area).
June/00	29.0	Added DataRam 128MB & Unigen Corp. 256MB parts. (In shaded area).
June/00	30.0	Added Kingston 128MB & 256MB parts. Part number change for Kingston 512MB parts. (In shaded area).
July/00	31.0	Added Unigen Corp, Simple Tech & Silicon Tech 128MB parts. Added Viking & DataRam 256MB parts. Added Simple Tech & Silicon Tech 512MB parts. (In shaded area).
July/00	32.0	Added Dane-Elec 128MB parts. Added Simple Tech & Silicon Tech 256MB & 512MB parts. (In shaded area).
Aug/00	33.0	Added Dane-Elec 128 & 256MB parts. Added Apacer 128MB parts. Added Unigen Corp. & DataRam 256MB parts. (In shaded area)
Aug/00	34.0	Added Dane-Elec & Viking 128MB parts. Added Apacer 512MB part. Added GoldenRAM info to the Distributor section. (In shaded area).
Aug/00	35.0	Added Kingston 128MB & 512MB parts. Correction made to GoldenRAM to Goldenram. (In shaded area).
Sept/00	36.0	Added Apacer 256MB part. Added Dane-Elec 128MB, 256MB & 1GB part. Added Viking 512MB part. Added Think Computer Products Inc. 256MB part. (In shaded area).
Sept/00	37.0	Added Dane-Elec 64MB parts. Correction made to change Goldenram back to GoldenRAM. (In shaded area).
Oct/00	38.0	Added PC100/PC133 Supported Memory Matrix. Added Micron, Samsung & Infineon PC133 parts. Added Micron, Samsung, Dane-Elec & Viking 128MB parts. Added Micron & Samsung 256MB parts. Added Dataram 512MB part. (In shaded area).
Oct/00	39.0	Updated distributor info for Centon Elec. Added distributor info for Silicon Tech. Added Dane-Elec 512MB part. Added Think Computer Products 128MB part. (In shaded area).
Oct/00	40.0	Added Dane-Elec 128MB, 256MB & 512MB parts. (In shaded area).
Nov/00	41.0	Added Dane-Elec 64MB & 256MB parts. Added Think Computer Products Inc. 256MB part. (In shaded area).
Nov/00	42.0	Added Dane-Elec 512MB part. Added GoldenRAM 64MB part. Added Aved Memory Products 128MB & 256MB parts. (In shaded area).
Dec/00	43.0	Added Aved Memory Products 64MB part. Added GoldenRAM 128MB part. Added Dataram 512MB part (In shaded area).
Dec/00	44.0	Added Aved Memory Products 128MB part. Added GoldenRam 64MB part. Added Dataram 512MB part. (In shaded area).
Jan/01	45.0	Added Aved Memory Products 64MB part. (In shaded area).
Jan/01	46.0	Added Aved Memory Products & Dataram 512MB parts. Added Dane-Elec, GoldenRAM & Dataram 256MB part. Added Viking 128MB part. Added 2 <sup>nd</sup> part number for Viking 128MB & 256MB parts. Identified EOL parts. (In shaded area).
Feb/01	47.0	Added Dataram & Aved Memory Products 512MB parts. Added Viking 64MB part. (In shaded area).

<b>Revision History-Continued</b>		
<b>Date</b>	<b>Rev</b>	<b>Modifications</b>
Mar/01	48.0	Added Aved Memory Products 128MB & 256MB parts. Dataram 256MB part. Viking 256MB & 1G part. Added GoldenRAM 64MB part. (In shaded area).
April/01	49.0	Added Dane-Elec 512MB, 256MB & 128MB parts. Added Dataram 512MB parts. Added Aved Memory Products 256MB, 128MB & 1G parts. Added Viking 256MB part. (In shaded area).
May/01	50.0	Added Dane-Elec 32MB part. Added Aved Memory Products, Dane-Elec & PNY 128MB parts. Added Aved Memory Products & GoldenRAM 256MB parts. Added Dataram 512MB parts. (In shaded area).
June/01	51.0	Added Dataram 128MB & 512MB parts. Added Viking 128MB part. (In shaded area).
June/01	52.0	Added Aved Memory Products 64MB & 128MB parts. Added Dataram 512MB part. (In shaded area)
June/01	53.0	Added ATP Electronics 512 part. (In shaded area)
June/01	54.0	Added Dataram and ATP Electronics 256mb parts. (In shaded area)
June/01	55.0	Added Dataram 256 and 512 parts. (In shaded area)
July/01	56.0	Added Dataram 256 and 512 parts. (In shaded area)
July/01	57.0	Added Dataram 256mb part. (In shaded area)
July/01	58.0	Added Dataram and Aved 256MB part. (In shaded area)
Aug/01	59.0	Added Aved Memory Products 256MB parts. (In shaded area)
Aug/01	60.0	Added Dane Elec 64MB, Aved Memory Products 256MB, PNY 512MB, ATP 1GB parts. (in shaded area)
Aug/01	61.0	Added Aved 256MB part. (in shaded area)
Aug/01	62.0	Added ATP 1GB, Aved 256MB part. (in shaded area)
Sep/01	63.0	Added Aved 128MB part. (In shaded area)
Oct/01	64.0	Added Dane 128MB part. (In shaded area)

© 2001 Intel Corporation

INTEL DISCLAIMS ALL LIABILITY FOR THESE DEVICES, INCLUDING LIABILITY FOR INFRINGEMENT OF ANY PROPRIETARY RIGHTS RELATING TO THESE DEVICES OR THE IMPLEMENTATION OF INFORMATION IN THIS DOCUMENT. INTEL DOES NOT WARRANT OR REPRESENT THAT SUCH DEVICES OR IMPLEMENTATION WILL NOT INFRINGE SUCH RIGHTS. INTEL IS NOT OBLIGATED TO PROVIDE ANY SUPPORT, INSTALLATION, OR OTHER ASSISTANCE WITH REGARD TO THESE DEVICES.

THE INTEL PRODUCT REFERRED TO IN THIS DOCUMENT IS INTENDED FOR STANDARD COMMERCIAL USE ONLY. CUSTOMERS ARE SOLELY RESPONSIBLE FOR ASSESSING THE SUITABILITY OF THE PRODUCT AND/OR DEVICES FOR USE IN PARTICULAR APPLICATIONS. THE REFERENCED INTEL PRODUCT IS NOT INTENDED FOR USE IN CRITICAL CONTROL OR SAFETY SYSTEMS OR IN NUCLEAR FACILITY APPLICATIONS.

Information in this document is provided in connection with Intel products. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by the sale of Intel products. Except as provided in Intel's Terms and Conditions of Sale for such products, Intel assumes no liability whatsoever, and Intel disclaims any express or implied warranty, relating to sale and/or use of Intel products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright or other intellectual property right. Intel products are not intended for use in medical, life saving, or life sustaining applications.

Intel retains the right to make changes to its test specifications and memory list at any time, without notice. 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. The C440GX+ product 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.

Information in this document is provided in connection with Intel® products. This test report is provided "as is" with no warranties whatsoever, including any warranty of merchantability, fitness for any particular purpose, or any warranty otherwise arising out of any product or testing proposal, specification or sample. No license, express, implied, or otherwise, to any intellectual property rights is granted by this document or by the sale of Intel products. Except as provided in Intel's Terms and Conditions of Sale for such products, Intel assumes no liability whatsoever, and Intel disclaims any express or implied warranty, relating to sale and/or use of Intel products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright or other intellectual property right. Intel products are not intended for use in medical, life saving, or life sustaining applications. Intel may make changes to specifications and product descriptions at any time, without notice.

Pentium is a registered trademarks of Intel Corporation. MMX is trademarks of Intel Corporation.

~ Third-party 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.

---

# Table of Contents

<b>OVERVIEW OF MEMORY TESTING.....</b>	<b>8</b>
<b>SUPPORTED MEMORY TYPES FOR PC-100 PARTS:.....</b>	<b>10</b>
<b>SUPPORTED MEMORY TYPES FOR PC-133 PARTS:.....</b>	<b>11</b>
UNBUFFERED, ECC, 100MHZ SDRAM DIMM MODULES 32MB SIZES (4MX72).....	12
UNBUFFERED, ECC, 100MHZ SDRAM DIMM MODULES 64MB SIZES (8MX72).....	12
UNBUFFERED, ECC, 100MHZ SDRAM DIMM MODULES 128MB SIZES (16MX72).....	13
UNBUFFERED, ECC, 100MHZ SDRAM DIMM MODULES 128MB SIZES (16MX72).....	14
UNBUFFERED, ECC, 100MHZ SDRAM DIMM MODULES 256MB SIZES (32MX72).....	15
UNBUFFERED, ECC, 100MHZ SDRAM DIMM MODULES 512 MB SIZES (64MX72).....	16
UNBUFFERED, NON-ECC, 100MHZ SDRAM DIMM MODULES 32MB SIZES (4MX72).....	17
UNBUFFERED, NON-ECC, 100MHZ SDRAM DIMM MODULES 64MB SIZES (8MX72).....	17
UNBUFFERED, NON-ECC, 100MHZ SDRAM DIMM MODULES 128MB SIZES (16MX72).....	18
UNBUFFERED, NON-ECC, 133MHZ SDRAM DIMM MODULES 256MB SIZES (32MX72).....	18
UNBUFFERED, NON-ECC, 100MHZ SDRAM DIMM MODULES 512 MB SIZES (64MX72).....	19
REGISTERED, ECC, 100MHZ SDRAM DIMM MODULES 64MB SIZES (8MX72).....	20
REGISTERED, ECC, 100MHZ SDRAM DIMM MODULES 128MB SIZES (16MX72).....	20
REGISTERED, ECC, 100MHZ SDRAM DIMM MODULES 128MB SIZES (16MX72) CONTINUED.....	21
REGISTERED, ECC, 133MHZ SDRAM DIMM MODULES 128MB SIZES (16MX72).....	21
REGISTERED, ECC, 100MHZ SDRAM DIMM MODULES 256MB SIZES (32MX72).....	22
REGISTERED, ECC, 100 MHZ SDRAM DIMM MODULES 256MB SIZES (32MX72) (CONTINUED).....	23
REGISTERED, ECC, 133MHZ SDRAM DIMM MODULES 256MB SIZES (32MX72).....	24
REGISTERED, ECC, 100MHZ SDRAM DIMM MODULES 512 MB SIZES (64MX72).....	25
REGISTERED, ECC, 133 MHZ SDRAM DIMM MODULES 512 MB SIZES (64MX72).....	26
REGISTERED, ECC, 100MHZ SDRAM DIMM MODULES 1 GB SIZES (128MX72).....	27
REGISTERED, ECC, 133MHZ SDRAM DIMM MODULES 1 GB SIZES (128MX72).....	27

<b>DISTRIBUTOR INFORMATION</b> .....	<b>28</b>
<i>ASIA</i> .....	28
<i>Europe</i> .....	28
<i>Japan</i> .....	28
<i>South America &amp; Mexico</i> .....	29
<i>North America</i> .....	29
<b><u>CMTL<sup>SM</sup> (COMPUTER MEMORY TEST LABS)</u></b> .....	<b>30</b>
<b><u>INTEL® PRODUCT DEALERS AND PRODUCT INTEGRATORS</u></b> .....	<b>30</b>

## Overview of Memory Testing

The following procedure is used to qualify Dual In-Line Memory Modules (DIMMs) for use with the C440GX+ server board. Memory is a vital subsystem in a server. Intel requires strict guidelines to be met before a DIMM vendor is put onto the qualified memory list. To be acknowledged on the list as a fully functional DIMM, the memory must undergo rigorous tests to ensure that the product will perform the intended Server and Workstation functions.

Memory qualification for Intel®'s Server and Workstation Board products is performed by Intel's Memory Validation Laboratory (MVL), and by an independent external test laboratory, Computer Memory Test Lab (+CMTL<sup>sm</sup>).

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 DIMM 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 NT~ v4.0 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. DIMMs 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.

CMTL Gold Certification: This certification program is administered and controlled by CMTL. For further information contact CMTL at [john@cmtlabs.com](mailto:john@cmtlabs.com)

---

+CMTL<sup>sm</sup> is a leading memory testing organization responsible for testing a broad range of memory products. A memory product, which receives a "PASS" after being tested by CMTL<sup>sm</sup>, means it functions correctly and consumers can use the product 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. Testing is performed on a number of Intel C440GX+ server boards.

John Deters	CMTL <sup>sm</sup>
714-960-1243 (voice)	(Computer Memory Test Lab)
714-960-4695 (fax)	101 Main Street, Suite 2G
	Huntington Beach, CA 92648
	<a href="http://www.cmtlabs.com">http://www.cmtlabs.com</a>



## Qualified SDRAM DIMM Memory for the C440GX+ Server Board

The C440GX+ memory module has 4 dual in-line memory module (DIMM) sockets that support up to 2GB of PC100 & PC133-compliant SDRAM system memory. The Intel® 82440GX AGPset supports different varieties of DIMM size, manufacturer, and speed. The BIOS will automatically detect the memory type, size, and speed. The following memory features are supported:

- 168-pin gold-plated SDRAM DIMMs
- Unbuffered or Registered 100MHz & 133MHz SDRAM ECC or Non-ECC DIMMs;
  - 32MB, 64MB, 128MB, 256MB, 512MB
  - 3.3v memory only
  - Single or double-sided DIMMs
  - Single layer or “stacked component” DIMMs

Memory features are detailed in the *C440GX+ Server Board Technical Product Specification* available on-line at <http://support.intel.com/support/motherboards/server/C440GX/>

The following tables list DIMM devices known to be compatible with the Intel C440GX+ Pentium® II & Pentium® III Xeon™ processor-ready server board. This document and the DIMM list will be updated as qualified memory is added during the life of the C440GX+ product.

Intel strongly recommends the use of ECC memory in all server systems. The Intel Pentium® II & Pentium® III Xeon™ processors used with the C440GX+ Server board with a 100MHz-system bus can be paired with 100MHz or 133MHz SDRAM DIMMs.

Memory modules not listed in the following tables may be used, however, Intel recommends the use of Advanced Tested ECC modules, and in the event of unreliable system operation, the modules should be replaced with Advanced Tested ECC modules to determine whether the unlisted or non - ECC modules are causing the problem. Intel recommends that module and DRAM vendors not be mixed in the same system.

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(SM) if there is a discrepancy. This list is subject to change without notice.

**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.

**Supported Memory Types for PC-100 parts:**

<b>PC-100 Unbuffered SDRAM Module Configurations</b>						
<b>DIMM Capacity</b>	<b>DIMM Organization</b>	<b>SDRAM Density</b>	<b>SDRAM Organization</b>	<b># SDRAM Devices/rows/Banks</b>	<b># Address bits rows/Banks/column</b>	
<b>Non ECC Memory</b>	32MB	4M x 64	16Mbit	2M x 8	16/2/2	11/1/9
	32MB	4M x 64	64Mbit	2M x 32	4/2/4	11/2/8
	32MB	4M x 64	64Mbit	4M x 16	4/1/4	12/2/8
	64MB	8M x 64	64Mbit	8M x 8	8/1/4	12/2/9
	128MB	16M x 64	64Mbit	8M x 8	16/2/4	12/2/9
	128MB	16M x 64	128Mbit	16M x 8	8/1/4	12/2/10
	256MB	32M x 64	128Mbit	16M x 8	16/2/4	12/2/10
	256MB	32M x 64	256Mbit	32M x 8	8/1/4	13/2/10
	512MB	64M x 64	256Mbit	32M x 8	16/2/4	13/2/10
<b>ECC Memory</b>	32MB	4M x 72	16Mbit	2M x 8	18/2/2	11/1/9
	32MB	4M x 72	64Mbit	2M x 32	5/2/4	11/2/8
	32MB	4M x 72	64Mbit	4M x 16	5/1/4	12/2/8
	64MB	8M x 72	64Mbit	8M x 8	9/1/4	12/2/9
	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	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	32M x 8	18/2/4	13/2/10
<b>PC-100 Registered SDRAM Module Configurations</b>						
<b>DIMM Capacity</b>	<b>DIMM Organization</b>	<b>SDRAM Density</b>	<b>SDRAM Organization</b>	<b># SDRAM Devices/rows/Banks</b>	<b># Address bits rows/Banks/column</b>	
<b>ECC Memory</b>	64MB	8M x 72	64Mbit	8M x 8	9/1/4	12/2/9
	128MB	16M x 72	64Mbit	16M x 4	18/1/4	12/2/10
	128MB	16M x 72	128Mbit	16M x 8	9/1/4	12/2/11
	256MB	32M x 72	64Mbit	16M x 4	36/2/4	12/2/10
	256MB	32M x 72	128Mbit	32M x 4	18/1/4	12/2/11
	256MB	32M x 72	128Mbit	16M x 8	18/2/4	12/2/10
	256MB	32M x 72	256Mbit	64M x 4	9/1/4	13/2/11
	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

**Supported Memory Types for PC-133 parts:**

<b>PC-133 Unbuffered SDRAM Module Configurations</b>						
<b>DIMM Capacity</b>	<b>DIMM Organization</b>	<b>SDRAM Density</b>	<b>SDRAM Organization</b>	<b># SDRAM Devices/rows/Banks</b>	<b># Address bits rows/Banks/column</b>	
<b>Non ECC Memory</b>	32MB	4M x 64	16Mbit	2M x 8	16/2/2	11/1/9
	32MB	4M x 64	64Mbit	2M x 32	4/2/4	11/2/8
	32MB	4M x 64	64Mbit	4M x 16	4/1/4	12/2/8
	64MB	8M x 64	64Mbit	8M x 8	8/1/4	12/2/9
	128MB	16M x 64	64Mbit	8M x 8	16/2/4	12/2/9
	128MB	16M x 64	128Mbit	16M x 8	8/1/4	12/2/10
	256MB	32M x 64	128Mbit	16M x 8	16/2/4	12/2/10
	256MB	32M x 64	256Mbit	32M x 8	8/1/4	13/2/10
	512MB	64M x 64	256Mbit	32M x 8	16/2/4	13/2/10
<b>ECC Memory</b>	32MB	4M x 72	16Mbit	2M x 8	18/2/2	11/1/9
	32MB	4M x 72	64Mbit	2M x 32	5/2/4	11/2/8
	32MB	4M x 72	64Mbit	4M x 16	5/1/4	12/2/8
	64MB	8M x 72	64Mbit	8M x 8	9/1/4	12/2/9
	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	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	32M x 8	18/2/4	13/2/10
<b>PC-133 Registered SDRAM Module Configurations</b>						
<b>DIMM Capacity</b>	<b>DIMM Organization</b>	<b>SDRAM Density</b>	<b>SDRAM Organization</b>	<b># SDRAM Devices/rows/Banks</b>	<b># Address bits rows/Banks/column</b>	
<b>ECC Memory</b>	64MB	8M x 72	64Mbit	8M x 8	9/1/4	12/2/9
	128MB	16M x 72	64Mbit	16M x 4	18/1/4	12/2/10
	128MB	16M x 72	64Mbit	8M x 8	18/2/4	12/2/10
	128MB	16M x 72	128Mbit	16M x 8	9/1/4	12/2/10
	256MB	32M x 72	64Mbit	16M x 4	36/2/4	12/2/10
	256MB	32M x 72	128Mbit	32M x 4	18/1/4	12/2/11
	256MB	32M x 72	128Mbit	16M x 8	18/2/4	12/2/10
	256MB	32M x 72	256Mbit	64M x 4	9/1/4	13/2/11
	256MB	32M x 72	256Mbit	32M x 8	9/1/4	13/2/10
	512MB	64M x 72	128Mbit	32M x 4	36/2/4	12/2/11
	512MB	64M x 72	256Mbit	64M x 4	18/1/4	13/2/11
	512MB	64M x 72	256Mbit	32M x 8	18/2/4	13/2/10
	1GB	128M x 72	256Mbit	64M x 4	36/2/4	13/2/11

## *C440GX+ Server Platform*

*Unbuffered, ECC, 100MHz SDRAM DIMM Modules  
32MB Sizes (4Mx72)*

Manufacturer	Part Number	DRAM Part Number	PCB Part Number	Date	CMTL Test #	EOL
Micron	MT5LSDT472AG-10CB1			2/15/99		
+Samsung	(Old #) KMM374S403CT-GL (New #) M374S0403CT0-C1L			1/14/99		

## *C440GX+ Server Platform*

*Unbuffered, ECC, 100MHz SDRAM DIMM Modules  
64MB Sizes (8Mx72)*

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
Fujitsu	PDC8UV7284C-102T-S				2/21/99		
Micron	MT9LSDT872AG-10CB4				2/24/99		
+Samsung	(Old #) KMM374S823CTS-GL (New #) M374S0823CTS-C1L				2/24/99		
~Viking	PE8721U4SN3-3226	KM48S8030CT-62	Samsung	9001601AG	5/24/99	A356	EOL
~Dataram	DTM60085	MT48LCM8A2TG-8E-B	Micron	40451	9/18/99	A394	
Micron	MT9LSDT872AG-10EC7				9/18/99		
+Samsung	(Old #) KMM374S823DTS-GL (New #) M374S0823DTS-CL100				9/18/99		
Legend	L0872PI2	HY57V658020A / TC-10S	Hyundai	PC58964-A1	11/5/99	A494	
GoldenRAM	7550110-GR	MT48LC8M8A2-8E	Micron	1030203-002B rev A	12/13/00	B657	
#~Aved Memory Products	AMP374P0823BTE-C1H/H	HY57V658020BTC-10P-A rev B	Hyundai	105500 rev A	6/1/01	D210	

+Samsung parts are available under both part numbers.

# Low Profile Part

~ This vendor is part of the CMTL Gold or Advance Certification program. This means this part has/will be tested across all compatible Intel Server Boards. For further information contact CMTL @ <http://cmtlabs.com/>

## *C440GX+ Server Platform*

### *Unbuffered, ECC, 100MHz SDRAM 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>EOL</b>
MICRON	MT18LSDT1672AG-10CB4				2/21/99		
+Samsung	(Old #) KMM374S1623CT-GL (New #) M374S1623CT0-C1L				3/15/99		
FUJITSU	PDC16UV7284C-102T-S				5/10//99		
TOSHIBA	THMY7216H1EG-80				5/24/99		
Dataram	DTM60086	MT48LC8M8A2TG-8E	Micron	40451	8/25/99	A397	
Legend	L1672PI2	HY57V658020A / TC-10S	Hyundai	PC16872-A2	11/25/99	A496	
~Viking	INT12801 And PC10016X72CL3-IA	UPD45128841G5-A10	NEC	9001601 / A	12/10/99	A515	
~Viking	INT12802	HY57V12898020TC-10S	Hyundai	9001601 rev A	1/3/00	A518	
~Viking	INT12803	KM48S16030T-GL	Samsung	9001601 rev A	1/21/00	A521	
~Dane Elec	DP100-072162A-3	Fujitsu	81F64842C-103FN	PC100-1672	1/26/00	A004	
~Dane Elec	DP100-072162A-3	NEC	D4564841G5-A80-9JF	PC100-1672	2/3/00	A009	
~Viking	INT12804	Micron	48LC16M8A2TG-8E	9001601 rev A	2/3/00	A524	
~Viking	INT12802	Hyundai	HY57V12898020 TC-10S	9001601 rev A	12/30/00	A518	
~Dane Elec	DP100-072162A	TC59SM708FT-80	Toshiba	PC100-1672	2/21/00	A739	
~Dane Elec	DP100-072162A-3	KM48S8030CT-GL	Samsung	PC100-1672	5/20/00	A765	
~Dane Elec	DP100-072162A-3	HYB39S64800BT-8 die B	Siemens	PC100-1672	5/30/00	A759	
Unigen Corporation	UG516S7448JC-PH	TC59SM708FT-80	Toshiba	INTEL8X8	6/28/00	B119	
~Viking	INT12803	K4S280832B-TC1L rev B	Samsung	9001601 rev A	8/7/00	B365	
~Dane-Elec	DP100-072162AU2	D4564841G5-A80-9JF	NEC	PC16872 A3 rev. B	9/26/00	B516	
Think Computer Products Inc.	TMINC440GX-128	HYB39S64800CT-8	Infineon	DA-6289 rev. A	10/5/00	B462	
Aved Memory Products	AMP366R1723ATE-C1H/H	HY57V2880AT-P rev A	Hyundai	105500 rev. A	11/16/00	B702	
Aved Memory Products	AMP366P1723BTE-C1H/S	K4S280832B-TC1H rev B	Samsung	105500 rev. A	11/16/00	B707	

*Continued.....*

***Unbuffered, ECC, 100MHz SDRAM 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>EOL</b>
Aved Memory Products	AMP374P1723BTE-C1H/S	K4S280832B-TC1H rev B	Samsung	105500 rev A	2/19/01	C373	
# Aved Memory Products	AMP374P1723ATE-C1H/H	HY57V28820AT-P rev A	Hyundai	105500 rev A	2/24/01	C414	
~Viking	INT12802	HY57V28820AT-S rev A	Hyundai	9001601 rev A	5/22/01	C865	
#Aved Memory Products	AMP374P1623BTE-C1H/H	HY57V658020bTC-10P-A rev B	Hyundai	105500 rev A	6/6/01	D215	

+Samsung parts are available under both part numbers.

# Low profile part.

~ This vendor is part of the CMTL Gold or Advance Certification program. This means this part has/will be tested across all compatible Intel Server Boards. For further information contact CMTL @ <http://cmtlabs.com/>

## *C440GX+ Server Platform*

### *Unbuffered, ECC, 100MHz SDRAM DIMM Modules 256MB Sizes (32Mx72)*

<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>EOL</b>
+Samsung	(Old #) KMM374S3323T-GL (New #) M374S3323MT0-C1L00				2/24/99		
Toshiba	THMY7232G1EG-80				3/10/99		
Corsair	CM724S256-GX2/T	TC59M708FT-80	Toshiba	50-00087A	10/3/99	A490	
Legend	L3272PI2	HY57V1298020A / TC-10S	Hyundai	PC16872-A2	12/25/99	A498	
~Viking	INT25618 And PC10032X72CL2-1A	D45128841G5-A80-9JF	NEC	9001601	6/26/00	B159	
Unigen Corporation	UG532S7448JC-PH	TC59SM708FT-80	Toshiba	INTEL8X8 rev 1.0	7/20/00	B117	
~Aved Memory Products	AMP366P3323ATE-C1H/H	HY57V28820AT-P rev A	Hyundai	105500 rev .A	11/16/00	B746	
GoldenRAM	7550130-GR	TC59SM708FT-75 rev A	Toshiba	1030203-002B rev B	1/26/01	B663	
# ~Aved Memory Products	AMP374P3323BTE-C1H/S	K4S280832B-TC1H rev B	Samsung	105500 rev A	2/19/01	C390	
# ~Aved Memory Products	AMP374P3323ATE-C1H/H	HY57V28820AT-P rev A	Hyundai	105500 rev A	5/1/01	D205	
#~Aved Memory Products	AMP374P3323ATE-C1H/MV	V54C3128804VAT-7 rev A	Mosel-Vitellic	105500 rev. A	7/26/2001	C541	
~Dataram	DTM60099(60099Z)(M)	MT48LC16M8A2TG-75 rev E	Micron	40451 rev B	7/24/2001	D662	
~#Aved Memory Products	AMP366P3323ATE-C1H/MI	MT48LC16M8A2TG-7E rev A	Micron	105500 rev A	8/24/2001	C994	

## *C440GX+ Server Platform*

*Unbuffered, ECC, 100MHz SDRAM DIMM Modules  
512 MB Sizes (64Mx72)*

<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>EOL</b>
+Samsung	++(Old #) KMM374S6453AT-GL (New #) M374S6453AT0-C1L00				01/27/00		
Infineon	++HYS72V64220GU-8A				01/27/00		
~Dane-Elec	DP100-072643I	HYB39S256800AT-8A	Infineon	PC16872 A3 rev. B	10/12/00	B558	
~Aved Memory Products	AMP374P6453BT1-C1H/S	K4S560832B-TC1H000 rev B	Samsung	105500 rev 1	1/10/01	B899	
~Dataram	DTM60177 (60177Z)	HYB39S256800CT-8 REV. C	Infineon	40512 rev A	3/8/01	C200	
# ~Dataram	DTM60177 60177Z)	HM5225805BTT-A6 rev C	Hitachi	40512 rev A	5/24/01	C203	

+Samsung parts are available under both part numbers.

# Low profile part.

~ This vendor is part of the CMTL Gold or Advance Certification program. This means this part has/will be tested across all compatible Intel Server Boards. For further information contact CMTL @ <http://cmtlabs.com/>



## ***C440GX+ Server Platform***

***Unbuffered, Non-ECC, 100MHz SDRAM DIMM Modules  
32MB Sizes (4Mx72)***

<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>EOL</b>
~Dane-Elec	DP100-0640438	NT56V1680A0T-8A	Nanya	PC54264A1	4/16/01	C568	

## ***C440GX+ Server Platform***

***Unbuffered, Non-ECC, 100MHz SDRAM DIMM Modules  
64MB Sizes (8Mx72)***

<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>EOL</b>
~Dane-Elec	DP100-064083AU2	NT56V6610C0T-8A	Nanya	PC16872 A3 rev. B	9/21/00	B506	
~Dane-Elec	DP100-064082A	D4564841G5-A80-9JF	NEC	PC16872 A3 rev. B	9/21/00	B511	
~Dane-Elec	DP100-064082A	NT56V6610C0T-75B	Nanya	PC16872 A3 rev. B	10/25/00	B473	
~Aved Memory Products	AMP366P0823BTE-C1H/H	HY57V658020BTC-10P rev B	Hyundai	105500 rev A	11/30/00	B791	
~#Dane-Elec	DP100-064081FL	K4S281632B-TC1H	Samsung	DE162023 rev B	08/17/01	E154	

# Low Profile Part

~ This vendor is part of the CMTL Gold or Advance Certification program. This means this part has/will be tested across all compatible Intel Server Boards. For further information contact CMTL @ <http://cmtlabs.com/>

## *C440GX+ Server Platform*

### *Unbuffered, Non-ECC, 100MHz SDRAM DIMM Modules 128MB Sizes (16Mx72)*

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
~Dane Elec	DP100-064162A-3	48LCM8A2	Micron	PCBPC100-1672 rev 1	1/6/00	A610	
~Dane Elec	DP100-064162A-3	Toshiba	TC59S6408CFT-80	PC100-1672	2/9/00	A727	
~Dane Elec	DP100-064162A-3	HYB39S64800BT-8	Siemens	PC100-1672 rev 1.0	3/11/00	A715	
~Dane Elec	DP100-064162A-3	KM48S8030CT-GL	Samsung	PC100-1672	3/11/00	A733	
~Dane-Elec	DP100-072162A-3	MT48LC8M8A2TG-8E	Micron	PC100-1672	7/12/00	A745	
~Dane-Elec	DP100-064163E	MT48LC16M8A2TG-8E	Micron	1672SY PC100 rev A	7/21/00	A853	
~Dane-Elec	DP100-064162AU2	D4564841G5-A80-9JF	NEC	PC16872 A3 rev. B	9/8/00	B489	
~Dane-Elec	DP100-064162A	NT56V6610C0T-75B	Nanya	PC16872 A3 rev. B	9/27/00	B478	
~Dane-Elec	DP100-064163A	NT56V6610C0T-8A	Nanya	PC16872 A3 rev. B	10/12/00	B497	
~Aved Memory Products	AMP366P1623BTE-C1H/H	HY57V658020BTC-10P-A rev B	Hyundai	105500 rev A	12/2/00	B785	
~PNY	7216ZHSTM4G13TW I-PK0	TC59SM708AFT-75 REV. A	Toshiba	40000494 rev A	4/10/01	C124	
~Dane-Elec	DP100-064161EL	HYB39S128800CT-8	Infineon	E119697/1672SYP C100	4/6/001	C580	
~Aved Memory Products	AMP366P1723ATE-C75/H	HY57V28820AT-H rev A	Hyundai	105500 rev A	3/26/01	C839	
~#Dane-Elec	DP100-064161FL	K4S281632B-TC1H	Samsung	DE162023 rev B	9/11/2001	E153	

## *C440GX+ Server Platform*

### *Unbuffered, Non-ECC, 133MHz SDRAM DIMM Modules 256MB Sizes (32Mx72)*

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
~Aved Memory Products	AMP366P3323ATE-C75/H	HY57V28820AT-H rev A	Hyundai	105500 rev A	3/20/01	C840	
~#Aved Memory Products	AMP366P3323ATE-C1H/MV	V54C3128804VAT-7 rev A	Mosel-Vitellic	105500 rev A	8/9/2001	C497	

# Low Profile Part

~ This vendor is part of the CMTL Gold or Advance Certification program. This means this part has/will be tested across all compatible Intel Server Boards. For further information contact CMTL @ <http://cmtlabs.com/>

## ***C440GX+ Server Platform***

***Unbuffered, Non-ECC, 100MHz SDRAM DIMM Modules  
512 MB Sizes (64Mx72)***

<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>EOL</b>
~Aved Memory Products	AMP366P6453BT1-C1H/S	K4S560832B-TC1H000 rev B	Samsung	105500 rev A	1/10/01	B894	
~Aved Memory Products	AMP366P6453BT1-C1H/I	HYB39S256800AT-8 REV. B	Infineon	105500 REV. A	1/30/01	C107	
~Dane-Elec	DP100-064642D-S	HYB39S128400CT-8	Infineon	E119697/1672SYP C100	3/7/01	C718	

# Low Profile Part

~ This vendor is part of the CMTL Gold or Advance Certification program. This means this part has/will be tested across all compatible Intel Server Boards. For further information contact CMTL @ <http://cmtlabs.com/>

## ***C440GX+ Server Platform***

***Registered, ECC, 100MHz SDRAM DIMM Modules  
64MB Sizes (8Mx72)***

<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>EOL</b>
GoldenRAM	7550210-GR	MT48LC8M8A2TG-8E rev A	Micron	1030095-001A rev. A	11/7/00	B651	
~Aved Memory Products	AMP377P0823BT2-C1H/H	HY57V658020BTC-10P-A rev B	Hyundai	105399 rev B	12/19/00	B988	
~Viking	PE8721R4SN3-UN01	UPD4564841G5-A80	NEC	9001602	2/5/01	C252	
GoldenRAM	7550210-GR	HYB39S64800CT-80	Infineon	1030238-001A rev A	2/24/01	B773	

## ***C440GX+ Server Platform***

***Registered, ECC, 100MHz SDRAM 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>EOL</b>
Fujitsu	PDC16RV7244C-102T-S				2/17/99		
+Samsung	(Old #) KMM377S1620CT3-GH (New #) M377S1620CT3-C1H				3/15/99		
Silicon Tech	SL72R4D16M4H-A10AV	D4564441G5-A10-9JF	NEC	00669	5/15/99	A349	
Simple Tech	STI7216118RD1-10AVG	D4564441G5-A10-9JF	NEC	00669	5/15/99	A339	
TOSHIBA	THMY7216FOEG-80				5/19/99		
~Viking	MD-460680	HYB39S64400BT-8 / B	Siemens	9001603G	9/7/99	A447	
+Samsung	(Old #) KMM377S1620DT3-GL (New #) M377S1620DT3-C1L00				9/20/99		
Micron	MT18LSDT162G-20EC2				3/3/00		
Samsung	KMM377S1620DT3-GH				3/6/00		
~Dataram	DTM60089	MT48LC16M4A2TG-8E	Micron	40455 rev B	5/17/00	A935	
~Dataram	DTM60089	HY57V654020BTC-10P	Hyundai	40455 rev B	6/7/00	A997	
Samsung	M377S1723BT3-C1H				6/12/00		
Kingston	KVR100X72RC2/128-IS	KM44S16030DT-GH rev D	Samsung	2022146-001 rev B00	6/15/00	B183	
Simple Tech	SINT7216118ARD1-10CVG	D45128841G5-A80	NEC	668 rev A	6/26/00	B162	
Silicon Tech	INT72R8E16M4H-A10CV	D45128841G5-A80	NEC	668 rev A	6/26/00	B163	
~Dane-Elec	DP100R072163E	HY57V1298020TC-75	Hyundai	16-25600A	7/19/00	A911	
Apacer	71.73325.112	HYB39S64800BT-8 rev B	Infineon	41.16063.012 rev 2	7/25/00	B306	

*Continued.....*

**Registered, ECC, 100MHz SDRAM DIMM Modules**  
**128MB Sizes (16Mx72)** *Continued.....*

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
~Dane-Elec	DP100R072163A	HYB39S64800BT-8	Infineon	16-25600A rev A	7/31/00	A916	
Kingston	KVR100X72RC2/128-IS	UPD4564441G5-A80-9JF	NEC	2022146-001 rev C00	8/15/00	B404	
~Viking	INT12816 And PC10016X72RCL2-IA	UPD45128841G5-A80-9JF	NEC	9001742	9/28/00	B493	
GoldenRAM	7550220-GR	MT48LC8M8A2TG-8E	Micron	1030095-001A rev A	12/1/00	B653	
~Viking	PE16721R4SN3-UN04	MT48LC16M8A2-8E REV. B	Micron	9001742 REV.A	1/26/01	C266	
# ~Aved Memory Products	AMP377P1723AT2-C1H/H	HY57V28820AT-P rev A	Hyundai	105399 rev B	2/9/01	C378	
# ~Aved Memory Products	AMP377P1723BT2-C1H/S	K4S280832B-TC1H rev B	Samsung	105399 rev B	2/9/01	C384	
# ~Aved Memory Products	AMP377P1723AT2-C1H/MI	MT48LC16M8A2TG-7E rev A	Micron	105399 rev B	4/27/01	C987	

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
Micron	MT18LSDT1672G-13EC2				8/21/00		
~Dane-Elec	DP133R072163C	TC59S6404CFT-75	Toshiba	168-327201C rev C	3/27/01	C897	
~Dataram	DTM60089 (60089Z)	MT48LC16M4A2TG-8E rev C	Micron	40455 rev B	5/9/01	C742	
#~Dataram	DTM60188(60188Z)(I)	HYB39S128400CT-7.5 rev C	Infineon	40506 rev A	6/20/01	C907	
#~ATP Electronics	AR32V72N4S4GAS	K4S280432A-TC75 rev A	Samsung	SR168N04V rev 2	6/18/01	D055	
~#Aved Memory Products	AMP377P1723AT2-C7B/MI	MT48LC16M8A2TG-7E rev A	Micron	105399 rev B	9/6/01	D003	

+Samsung parts are available under both part numbers.

# Low Profile Part

~ This vendor is part of the CMTL Gold or Advance Certification program. This means this part has/will be tested across all compatible Intel Server Boards. For further information contact CMTL @ <http://cmtlabs.com/>

## *C440GX+ Server Platform*

*Registered, ECC, 100MHz SDRAM DIMM Modules  
256MB Sizes (32Mx72)*

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
+Samsung	(Old #) KMM377S3323T-GL (New #) M377S3323MT0-C1L00				2/14/99		
FUJITSU	PKC32RV7244H-102TPI				2/20/99		
Silicon Tech	SL72R4G32M4H-A10AV	TC5956404BFT-80	Toshiba	00734	5/19/99	A346	
Simple Tech	STI7232118IRD2-10AVG	TC59S6404BFT-80	Toshiba	00734	5/19/99	A345	
~Viking	3D32722R4SN3-3226	KM44S16030CT-GL	Samsung	(1) 9811610 (2) 9811609AG	5/25/99	A357	EOL
Dataram	DTM60087	MT48LC16M4A2TG-8E	Micron	40455	6/18/99	A389	
Centon Electronics	CINT256M/RP100S	V54C365404VBT8PC	Mosel-Vitellic	CPCB-00401	6/25/99	A391	
ATP Electronics	AMR32V72J4S4GH	KM44S32030T-GH	Samsung	SR168J04V	6/30/99	A404	
Toshiba	THMY7232FOEG-80				10/20/99		
~Viking	INT25601	UPD45128441G5-A10 / A	NEC	9001690G	1/9/00	A557	
GoldenRAM	C440GX/256RE-GR	Toshiba	TC59S6404BFT-80	1030099-001A	1/29/00	A570	
~Viking	INT25604	Toshiba	TC59SM704FT-80 / A	9001690G	2/9/00	A563	
~Viking	INT25603	KM44S32030AT-GL / A	Samsung	9001690G	2/19/00	A560	
Admor Memory LLC	ADIN256-C440GX	D45128841G5-A10-9JF die A	NEC	16-25600A rev A	4/28/00	A880	
~Dataram	DTM60287(60087Y)	MT48LC16M8A2TG-8E	Micron	40454 rev C	5/6/00	A893	
Micron	MT18LSDT3272G-10EB1				5/8/00		
Samsung	KMM377S3323AT-GH				5/15/00		
Unigen Corporation	UG532S7544JG-PH	TC59SM704FT-80	Toshiba	RAWCARD-B	6/5/00	B120	
Kingston	KVR100X72RC2/256-IS	TC59SM704FT-80	Toshiba	2022146-001 rev B00	6/15/00	B185	
~Dataram	DTM60122	HY57V1294020TC-10P	Hyundai	40455 rev B	7/6/00	B196	
Simple Tech	SINT7232118ARD2-10CVG	D45128841G5-A80	NEC	668 rev A	7/11/00	B164	
Silicon Tech	INT72R8E32M4H-A10CV	D45128841G5-A80	NEC	668 rev A	7/11/00	B165	
~Dane-Elec	DP100R072322E	D45128841G5-A75-9JF	NEC	16-25600A rev A	7/17/00	A830	
~Dataram	DTM60287(60087Y)	HY57V1298020TC-10P	Hyundai	40454 rev C	7/27/00	A928	
~Dane-Elec	DP100R072323E	D45128841G5-A80-9JF	NEC	16-25600B rev B	8/25/00	B437	
~Dane-Elec	DP100R072322E-2	D45128841G5-A80-9JF	NEC	16-25600B rev B	8/25/00	B442	
Apacer	71.84325.412	MT48LC16M8A2TG-8E	Micron	48.16.63.002	9/6/00	B411	
Think Computer Products Inc.	TMINC440GX-256R	MT48LC16M8A2-8E rev. B	Micron	KO-6178 Rev A	9/15/00	B467	

*Continued.....*

**Registered, ECC, 100 MHz SDRAM DIMM Modules  
256MB Sizes (32Mx72) (Continued)**

<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>EOL</b>
~Dane-Elec	DP100R072323E	K4S280832B-TC1H	Samsung	16-25600B rev. B	10/12/00	B565	
~Dane-Elec	DP100R072322E	TC59SM708FT-80	Toshiba	16-25600B rev. B	10/26/00	B685	
~Dane-Elec	DP100R072323E	TC59SM708FT-80	Toshiba	16-25600B rev. B	11/01/00	B690	
~Dane-Elec	DP100R072323E	HYB39S128800CT-8	Infineon	16-25600B rev B	1/4/01	B956	
GoldenRAM	7550230-GR	MT48LC32M4A2TG-75 Rev.A	Micron	1030099-001B rev B	1/15/01	B664	
~Dane-Elec	DP100R072322E	HYB39S128800CT-8	Infineon	16-25600B rev B	1/23/01	B948	
# ~Dataram	DTM60171(60171Z)	K4S560832B-TC1H REV. B	Samsung	40506 REV. A2	1/26/01	C214	
~Aved Memory Products	AMP377P3323BT2-C1H/S	K4S280832B-TC1H rev B	Samsung	105352 rev B	2/12/01	C395	
~Aved Memory Products	AMP377P3323AT2-C1H/H	HY57V28820AT -P rev A	Hyundai	105352 rev B	2/13/01	C401	
~Viking	PE32721R4SN3-UN01	UPD45128441G5-A80	NEC	9001603	2/21/01	C259	
~Dataram	DTM60287(60087Y)	MT48LC16M8A2TG-75 REV. B	Micron	40454 REV. C	2/27/01	C295	
# ~Dataram	DTM60171(60171Z)	HM5225805BTT-A6 REV. B	Hitachi	40506 REV. A2	3/1/01	C221	
~Aved Memory Products	AMP377P3323AT2-C1H/MV	V54C3128804VAT-7 rev. A	Mosel-Vitellic	105352 rev B	4/23/01	C503	
~Dataram	DTM60189(M)(60189Z)	MT48LC16M8A2TG-75 rev E	Micron	40532 rev B	6/25/01	C900	
~Dataram	DTM60287(60087Y)(M)	MT48LC16M8A2TG-75 rev E	Micron	40054 rev C	7/12/2001	D634	
~Dataram	DTM60122 60122Z (M)	MT48LC32M4A2TG-75 rev E	Micron	40455 rev B	7/18/2001	D878	
~Aved Memory Products	AMP377P3323AT2-C1H/MI	MT48LC16M8A2TG-7E rev A	Micron	105352 rev B	08/29/01	D064	

*Continued.....*

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
Samsung	M390S3320BT1-C75				8/21/00		
~Dataram	DTM60125	MT48LC32M4A2TG-75 rev B	Micron	40481 rev A	2/21/01	C474	
#~Aved Memory Products	AMP377P3253BTE-C75/S	K4S560832B-TC75 REV.B	Samsung	105399 rev B	2/28/01	C290	
~Aved Memory Products	AMP377P3323AT2-C75/H	HY57V28820AT-H rev A	Hyundai	105352 rev B	3/21/01	C841	
~Dane-Elec	DP133R072323E	HYB39S128800CT-7.5 rev B	Infineon	16-25600B rev B	3/21/01	C893	
~Viking	INT25624	HY57V28820AT-H rev. A	Hyundai	9001742 rev A	4/2/01	C460	
GoldenRAM	7550030-GR	MT48LC16M8A2-7.5	Micron	1030238-001A rev A	4/6/01	C982	
~Dataram	DTM60188(60188Z)(M)	MT48LC32M4A2TG-75 rev B	Micron	40506 rev A	7/10/2001	C915	
~Aved Memory Products	AMP377P3323AT2-C7B/MI	MT48LC16M8A2TG-7E rev A	Micron	105352 rev B	08/13/01	C951	

+Samsung parts are available under both part numbers.

# Low Profile Part

~ This vendor is part of the CMTL Gold or Advance 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.



## *C440GX+ Server Platform*

*Registered, ECC, 100MHz SDRAM DIMM Modules  
512 MB Sizes (64Mx72)*

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
+SAMSUNG	(Old #) KMM377S6427T3-GL (New #) M377S6427MT3-C1L00				4/01/99		
TOSHIBA	THMY7264EOLEG-80				4/01/99		
~Dataram	DTM60091	KM44S32030T-GL	Samsung	40455	4/22/99	A328	
Silicon Tech	SL72R4J64M4H-A10AV	TC59SM704FT-80	Toshiba	10000-00734-211	5/16/99	A326	
Simple Tech	STI7264118IRD2-10AVG	TC59SM704FT-80	Toshiba	10000-00734-211	5/16/99	A324	
Corsair	CM744S512-GX/S	KM44S32030T-GL	Samsung	50-00092 / A	10/7/99	A502	EOL
~Viking	INT51201	HY57V1294020TC-10S	Hyundai	(1) 9923715AG (2) 9923716-23	10/15/99	A506	
~Viking	INT51202	KM44S32030T-GL	Samsung	9923715\ A.9923716/A	10/29/99	A533	EOL
~Dataram	DTM60091	HY57V1294020TC-10S	Hyundai	40455 rev A	11/19/99	A555	
Kentron	KT6472SRN0R-14	KM4432030-G8	Samsung	3272SRN-PCB	12/17/99	A596	EOL
Kingston	~KVR100X72RC3/512-IS	12350-01	Staktek	202224-001	1/14/00	A583	
Infineon	++HYS72V64200GR-8B				1/27/00		
Infineon	++HYS72V128220GR-8B				1/27/00		
+Samsung	~ ++ (Old #) KMM377S6453AT-GH (New #) M377S6453ATO-C1H00				1/27/00		
+Samsung	~ ++ (Old #) KMM377S6450AT3-GH (New #) M377S6450AT3-C1H00				1/27/00		
~DataRam	DTM60091	TC59SM704FT-80 17948D	Toshiba	40455 rev B	1/15/00	A578	
Advantage Memory	SD6472-32X4S-81VRS4	KM44S32030AT-GL	Samsung	A5208 rev A	3/19/00	A838	
Simple Tech	SINT7264218RD2-10CVG	HYB39S256800AT-8	Infineon	814 rev A	6/28/00	B210	
Silicon Tech	INT72R8F64M8H-A10CV	HYB39S256800AT-8	Infineon	814 rev A	6/28/00	B211	
Apacer	71.95325.112	HYB39S256800AT-8	Infineon	48.16063.002	8/1/00	B358	
Kingston	KVR100X72RC3/512-IS	HYB39S256400AT-8	Infineon	2022254-001 rev A00	8/11/00	B406	
~Viking	INT51208	0312404CT3A rev. A	IBM	9923715C rev. C 9923716A rev.A 9923717A rev. A	9/15/00	B455	
~Dataram	DTM60291(60163Z)	HYB39S256800T-8A	Infineon	40454C rev. C	9/29/00	B426	
~Dane-Elec	DP100R072643I-2	16-25600B rev. B	Infineon	16-25600B rev. B	10/5/00	B431	
Think Computer Products Inc.	TMINC440GX-512	0325804CT3A	IBM	KO-6187 rev. A	11/01/00	B671	
~Dane-Elec	DP100R072642I	HYB39S256800AT-8	Infineon	16-25600B rev. B	11/8/00	B682	
~Dataram	DTM60292(60161Z)	K4S560832B-TC1H rev B	Samsung	40454 rev C	11/21/00	B396	
~Dataram	DTM60291(60163Z)	K4S560832A-TCIL rev A	Samsung	40454 rev C	12/13/00	B814	
~Aved Memory Products	AMP377P6453BT2-C1H/S	K4S560832B-TC1H000	Samsung	1053352 rev 2	1/8/01	B905	
~Dataram	DTM60164 (60164Z)	MT48LC32M4AZFC-8E	Micron	40505 rev A	3/9/01	C757	

*Continued.....*

**Registered, ECC, 100MHz SDRAM DIMM Modules  
512 MB Sizes (64Mx72).....(Continued)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
~Dataram	DTM60175 (60175Z)	HM5225805BTT-A6 REV. B	Hitachi	40511 rev A	3/12/01	C207	
~Dataram	DTM60091(60091Z)	HY57V28420AT-S REV. A	Hyundai	40455 rev B	5/4/01	C857	
# ~Dataram	DTM60175 (60175Z)	HYB39S256800CT-8 rev C	Infineon	40511 rev A	5/18/01	C211	
~Dataram	DTM60291(60163Z)	HYB39S256800CT-8 rev C	Infineon	40454 rev C	5/30/01	D009	
~Dataram	DTM60091(Y)(60091Z)	HY57V28420AT-S rev A	Hyundai	40455 rev B	6/25/01	C857	
~#Aved Memory Products	AMP377P3323AT2-C75/MV	V54C3128804VAT-7 rev A	Mosel-Vitellic	105352 Rev.B	8/7/01	C515	

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
Infineon	HYS72V64300GR-7.25-C2				8/24/00		
Samsung	M390S6450BT1-C75				8/31/00		
Aved Memory Products	AMP377P6453BT2-C75/S	K4S560832B-TC75	Samsung	105352 REV. B	1/15/01	C097	
~Dataram	DTM60133 (60133Z)	Hitachi	HM5225405BT T-75 rev A	40481 rev a2	1/23/01	C026	
~Dataram	DTM60133 (60133Z)	K4S560432A-TC75 rev A	Samsung	40481 rev A2	1/30/01	C017	
~Aved Memory Products	AMP377P6450BT3-C75/S	K4S560432B-TC75 REV. B	Samsung	105349 REV. C	2/2/01	C274	
~Dane-Elec	DP133R072643H	K4S560432A-TC75	Samsung	168-327201C rev C	3/12/01	C933	
~Dataram	DTM60176(60176Z)	HYB39S256800CT-75	Infineon	40511 rev A	4/6/01	C242	
#ATP Electronics	AR64V72N4S8GAS	K4S560432B-TC75 rev B	Samsung	SR168N04V rev 2	6/12/01	D034	
~Dataram	DTM60176(60176Z)(H)	HM5225805BTT-75 rev B	Hitachi	40511 rev A	6/30/2001	C235	
~PNY	7264WHSTM8G24T WR-PK0	TC59SM808BFT-75 rev B	Toshiba	40000476 rev B	08/17/01	C147	

+Samsung parts are available under both part numbers.

# Low Profile Part

~ This vendor is part of the CMTL Gold or Advance 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 has 256Mb DRAM Parts and can only be used with BIOS 6.1 or latter.  
(Earlier BIOS will not support 256Mb DRAM technology)

**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.

## *C440GX+ Server Platform*

*Registered, ECC, 100MHz SDRAM DIMM Modules  
1 GB Sizes (128Mx72)*

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
~Dane-Elec	DP100R072282H	HY39S256400AT-8	Infineon	16-25600B rev B	8/30/00	B446	
~Dane-Elec	DP100R072283H	HYB39S256400AT-8	Infineon	16-25600B rev. B	8/30/00	B448	
~Viking	4D128722R8SN3-UN01	K4S560432A-TC1H	Samsung	9923717A/9923716A /9923715C REV.A-C	2/27/01	C248	
~Aved Memory Products	AMP377P2857BT 1-C1H/S	K4S560432B-TC1H000 rev B	Samsung	105503 rev A	3/27/01	B913	

## *C440GX+ Server Platform*

*Registered, ECC, 133MHz SDRAM DIMM Modules  
1 GB Sizes (128Mx72)*

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
~#ATP Electronics	AR128V72N4SSG AS	K4S560432B-TC75 rev B	Samsung	SR168N04V rev 2	08/17/01	D027	
~#ATP Electronics	AR128V72J4SSG AS	K4S560432B-TC75 rev B	Samsung	SR168J04V rev 1	08/30/01	D041	

+Samsung parts are available under both part numbers.

# Low Profile Part

~ This vendor is part of the CMTL Gold or Advance 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 has 256Mb DRAM Parts and can only be used with BIOS 6.1 or latter.  
(Earlier BIOS will not support 256Mb DRAM technology)

**Note:** C440GX Server board only supports up to 2GB's of memory. When using 1G sticks you can only install up to two modules.

**Caution:** Some modules on this list may contain "stacked" DRAM parts. These parts may have thermal & physical limitations in some chassis configurations. It is advised to verify that your chassis configuration will support "stacked" parts before purchase.

# Distributor Information

## ASIA

Vendor Name	Distributor Name	Contact Name	PhoneNumber	Fax Number/E-Mail
ATP Electronics, Inc	ATP Electronics, Inc. Taiwan	Suzan Chang	011-886-2-2718-8405	011-886-2-2718-8253
Centon Electronics		John Hardacre	800-234-9292	
Corsair (USA)		Richard Hashim	01-510-657-8747 ext. 204	<a href="http://www.corsairmicro.com/sales.htm">http://www.corsairmicro.com/sales.htm</a>
Dataram	Avnet, Inc.		800-426-7999	
Dataram	Arrow ICP		888-427-2250	
Dataram	Pioneer Standard Electronics/Keylink Systems		800-539-5465	
Dataram	Wyle Systems		800-318-9953	
Silicon Tech				<a href="http://www.silicontech.com/contact/salescontacts.shtml">http://www.silicontech.com/contact/salescontacts.shtml</a>
Viking Components			++65.235.8832	

## Europe

Vendor Name	Distributor Name	Contact Name	PhoneNumber	Fax Number/E-Mail
ATP Electronics, Inc	Llanos & Asociados (Spain)	Jose Vasquez	34-902-40-39-38	34-94-480-41-89
Centon Electronics		John Hardacre	800-234-9292	
Corsair (USA)		Richard Hashim	01-510-657-8747 ext. 204	<a href="http://www.corsairmicro.com/sales.htm">http://www.corsairmicro.com/sales.htm</a>
Dataram	Avnet, Inc.		800-426-7999	
Dataram	Arrow ICP		888-427-2250	
Dataram	Pioneer Standard Electronics/Keylink Systems		800-539-5465	
Dataram	Wyle Systems		800-318-9953	
Silicon Tech				<a href="http://www.silicontech.com/contact/salescontacts.shtml">http://www.silicontech.com/contact/salescontacts.shtml</a>
Viking Components			++65.235.8832	

## Japan

Vendor Name	Distributor Name	Contact Name	PhoneNumber	Fax Number/E-Mail
ATP Electronics, Inc	ATP Electronics, Inc. Taiwan	Suzan Chang	011-886-2-2718-8405	011-886-2-2718-8253
Centon Electronics		John Hardacre	800-234-9292	
Corsair (USA)		Richard Hashim	01-510-657-8747 ext. 204	<a href="http://www.corsairmicro.com/sales.htm">http://www.corsairmicro.com/sales.htm</a>
Dataram	Avnet, Inc.		800-426-7999	
Dataram	Arrow ICP		888-427-2250	
Dataram	Pioneer Standard Electronics/Keylink Systems		800-539-5465	
Dataram	Wyle Systems		800-318-9953	
Silicon Tech				<a href="http://www.silicontech.com/contact/salescontacts.shtml">http://www.silicontech.com/contact/salescontacts.shtml</a>
Viking Components			++65.235.8832	

## South America & Mexico

Vendor Name	Distributor Name	Contact Name	PhoneNumber	Fax Number/E-Mail
ATP Electronics, Inc	ATP Electronics, Inc. -U.S.A.	Martha Wu	408-732-5000	408-732-5055
Centon Electronics		John Hardacre	800-234-9292	
Corsair (USA)		Richard Hashim	01-510-657-8747 ext. 204	<a href="http://www.corsairmicro.com/sales.htm">http://www.corsairmicro.com/sales.htm</a>
Dataram	Avnet, Inc.		800-426-7999	
Dataram	Arrow ICP		888-427-2250	
Dataram	Pioneer Standard Electronics/Keylink Systems		800-539-5465	
Dataram	Wyle Systems		800-318-9953	
Silicon Tech				<a href="http://www.silicontech.com/contact/salescontacts.shtml">http://www.silicontech.com/contact/salescontacts.shtml</a>
Viking Components			++65.235.8832	

## North America

Vendor Name	Distributor Name	Contact Name	PhoneNumber	Fax Number/E-Mail
Admor Memory LLC	Admor Memory	Paul Lawrence	800-213-2231/ Direct 949655-7213	Fax 949-789-7294 <a href="mailto:plawrence@admor.com">plawrence@admor.com</a>
ATP Electronics, Inc	ATP Electronics, Inc. - U.S.A.	Martha Wu	408-732-5000	408-732-5055
Centon Electronics		John Hardacre	800-234-9292	
Corsair	Synnex Information Technologies	Jack Chen	800-756-9888	<a href="http://www.corsairmicro.com/sales.htm">http://www.corsairmicro.com/sales.htm</a>
Dataram	Avnet, Inc.		800-426-7999	
Dataram	Arrow ICP		888-427-2250	
Dataram	Pioneer Standard Electronics/Keylink Systems		800-539-5465	
Dataram	Wyle Systems		800-318-9953	
GoldenRAM  <a href="http://www.goldenram.com">www.goldenram.com</a>	Direct Sales	Jason M. Barrette  Michael Meyer	800/222-8861 ext. 7546 800/222-8661 ext. 7512	<a href="mailto:jasonb@goldenram.com">jasonb@goldenram.com</a> 949/460-7646 fax <a href="mailto:michaelm@goldenram.com">michaelm@goldenram.com</a> 949/460-7612 fax
Silicon Tech				<a href="http://www.silicontech.com/contact/salescontacts.shtml">http://www.silicontech.com/contact/salescontacts.shtml</a>
Viking Components			++65.235.8832	

### **CMTL<sup>sm</sup> (Computer Memory Test Labs)**

CMTL<sup>sm</sup> 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 Qualification Lab. Intel routinely audits the CMTL facility to ensure all procedures, process handling, and testing methodologies are met.

### **Intel® Product Dealers and Product Integrators**

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

#### **IMPORTANT NOTE**

DIMM devices with gold contacts should NOT be placed into DIMM sockets with tin-lead contacts or vice-versa. Mixing dissimilar metal contact types has been shown to result in unreliable memory operation. Intel recommends similar manufacturer and similar speeds in each bank on the memory module. Mixing of dissimilar memory manufacturer devices or dissimilar memory device speeds is not recommended. This document contains information which is the proprietary property of Intel Corporation. Nothing in this document constitutes a guaranty, warranty, or license, express or implied. Intel has tested the following DIMMs for minimum electrical and functional compatibility with boxed Pentium® II Xeon™ processors. This listing is not intended to be all inclusive; it only represents the DIMMs Intel or CMTL has tested. Users of this list are reminded to check with the DIMM manufacturer or Distributor to ensure that a particular DIMM model is adequate for the intended purpose on the boxed Pentium II 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 C440GX+ 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.

Product and corporate names listed in this document may be trademarks of their respective companies.