



# Enterprise Server Group

## Intel<sup>®</sup> N440BX DP Server System & Baseboard

### Tested Memory List

*Revision 70*  
*July, 2001*



## Revision History

Revision		Revision History
June, 1998	Rev. 1	Updated list with recently tested memory devices.
August, 1998	Rev. 2	Updated list with recently tested memory devices. Added information CMTL <sup>SM</sup> testing and lists.
September, 1998	Rev. 3	Updated list with recently tested memory devices
October, 1998	Rev. 4	Updated list with recently tested memory devices
November, 1998	Rev. 5	Updated list with recently tested memory devices
December, 1998	Rev. 6	Added Dane-Elec to the memory list (shaded modules in table).
December, 1998	Rev. 7	Adding Kingston to the memory list (shaded modules in table).
December, 1998	Rev. 8	Adding Dataram memory to the list (shaded modules in table).
January, 1999	Rev. 9	Adding new memory to the list (shaded modules in table).
February, 1999	Rev. 10	Updated document structure & memory list.
March, 1999	Rev. 11	Added new memory to the list w/DRAM part# (shaded modules in table).
March, 1999	Rev. 12	Added new memory to the list (shaded modules in table).
March, 1999	Rev. 13	Added new memory to the list (shaded modules in table).
April, 1999	Rev. 14	Added new memory to the list (shaded modules in table).
April, 1999	Rev. 15	Part number change for Dataram & added Southland memory (shaded modules in table).
May, 1999	Rev. 16	Added new memory to the list (shaded modules in table).
May, 1999	Rev. 17	Added new memory to the list (shaded modules in table).
May, 1999	Rev. 18	Part number change for Southland and added new memory to the list (shaded modules in table).
June, 1999	Rev. 19	Added new memory to the list (shaded modules in table).
June, 1999	Rev. 20	Part number correction (shaded modules in table).
June, 1999	Rev. 21	Added new memory to the list (shaded modules in table).
July, 1999	Rev. 22	Added new memory to the list (shaded modules in table).
July, 1999	Rev. 23	Added new memory to the list (shaded modules in table).
July, 1999	Rev. 24	Part number and name correction. (shaded modules in table).
July, 1999	Rev. 25	Added new memory to the list (shaded modules in table).
Aug., 1999	Rev. 26	Added new memory to the list (shaded modules in table).
Sept, 1999	Rev. 27	New format, adding DRAM & PCB part numbers. Added new memory to the list.
Oct, 1999	Rev. 28	Removed Vital memory from the list. Added new memory to the list. (Shaded modules in table). Added DRAM Vendor and CMTL's "Gold Certification" to the list.

<b>Revision (continued)</b>		<b>Revision History</b>
Oct, 1999	Rev. 29	Added new memory to the list (Shaded modules in table). Added DRAM Vendor and CMTL's "Gold Certification" to the list.
Nov, 1999	Rev. 30	Added new memory to the list (Shaded modules in table). Add column to identify end of life product. (EOL).
Nov, 1999	Rev. 31	Added new memory to the list (Shaded modules in table).
Dec. 1999	Rev. 32	Added new memory to the list (Shaded modules in table).
Dec. 1999	Rev. 33	Part number changes on Samsung parts and removed disapproved parts. Added new qualified part. (In shaded area). Add distributor information.
Jan. 2000	Rev. 34	Added new qualified part. (In shaded area). Add distributor information.
Jan. 2000	Rev. 35	Added new qualified part. (In shaded area). Added "Old & "New" Samsung part numbers. Add distributor information.
Jan. 2000	Rev. 36	Added new qualified part. (In shaded area).
Feb. 2000	Rev. 37	Added Dane Elec & MSC Vertriebs GmbH 128MB parts. (In shaded area).
Feb. 2000	Rev. 38	Added DataRam 256MB part. (In shaded area).
Feb. 2000	Rev. 39	Added Dane Elec 128MB & Samsung 128MB part. (In shaded area).
Mar. 2000	Rev. 40	Added Smart Modular 256MB part. (In shaded area).
Mar. 2000	Rev. 41	Added Silicon Tech & Simple Tech 256MB parts. Added Dane Elec 128MB part. (In shaded area).
Mar. 2000	Rev. 42	Added DataRam 256MB & Dane Elec 128MB parts. Simple Tech 256MB part number change. Part number updates for Samsung parts. Changed "H. CO Products" to "H. Co. Computer Products, Inc." (In shaded area).
April 2000	Rev. 43	Added Dane Elec 128MB part. Part number correction for Simple Tech 256MB part. (In shaded area).
May 2000	Rev. 44	Added Viking 256MB part. (In shaded area).
May 2000	Rev. 45	Added DataRam 64MB part. (In shaded area).
May 2000	Rev. 46	Added MSC Vertriebs GmbH 256MB part. (In shaded area).
June 2000	Rev. 47	Added two DataRam 128MB parts. (In shaded area).
June 2000	Rev. 48	Added Smart Module 256MB parts. (In shaded area).
July 2000	Rev. 49	Added DataRam 256MB parts. (In shaded area).
July 2000	Rev. 50	Added Dane-Elec 128MB parts. (In shaded area).
Aug 2000	Rev. 51	Added Dane-Elec & Apacer 128MB parts. (In shaded area).
Aug 2000	Rev. 52	Added Dane-Elec 128MB parts. (In shaded area).
Sept 2000	Rev. 53	Added DataRam 256MB part. (In shaded area).
Sept 2000	Rev. 54	Added Dane-Elec 64MB part. (In shaded area).
Sept 2000	Rev. 55	Added Apacer 256MB part. Added Think Computer Products Inc. 512MB part. (In shaded area).
Oct 2000	Rev. 56	Updated distributor info for Centon Elec & Silicon Tech. Added Dane-Elec 128MB & 256MB parts. (In shaded area).
Oct 2000	Rev. 57	Added Dane-Elec 256MB part. (In shaded area).
Nov 2000	Rev. 58	Added Think Computer Products Inc. & Crucial Technologies 128MB parts. Added Dane-Elec 256MB part. (In shaded area).
Nov 2000	Rev. 59	Added Dane-Elec 64MB, 128MB & 256MB parts. Identified EOL parts. (In shaded area).

<b>Revision (continued)</b>		<b>Revision History</b>
Dec 2000	Rev. 60	Added Aved Memory Products 128MB part. (In shaded area).
Dec 2000	Rev. 61	Added Aved Memory Products 128MB & 256MB parts. Added Dane-Elec 256MB part. Added Aved Memory Products 64MB parts. (In shaded area).
Jan 2001	Rev. 62	Added Dane-Elec & Viking 256MB parts. (In shaded area).
Mar 2001	Rev. 63	Added Viking 64MB & 128MB parts. Added Aved Memory Products 128MB & 256MB parts. Added Dataram 256MB part. (In shaded area).
April 2001	Rev. 64	Added Aved Memory Products 256MB & 128MB parts. Added Dane-Elec 256MB & 128MB parts. (In shaded area).
May2001	Rev. 65	Added Dataram & Viking 128MB parts. Added Dane-Elec 64MB & 256MB parts. Added Aved Memory Products 256MB. (In shaded area).
June2001	Rev. 66	Added Aved Memory Products 128MB & 256MB parts. (In shaded area).
June2001	Rev. 67	Added Aved Memory Products 64MB & 128MB parts. (In shaded area).
June 2001	Rev. 68	Added Aved Memory Products 256MB part. (In shaded area).
June 2001	Rev. 69	Dataram 256MB part. (In shaded area).
July 2001	Rev. 70	Dataram 256MB part. (In shaded area)

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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 qualify Dual In-Line Memory Modules (DIMMs) for use with the N440BX 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 pass Advanced Environmental Testing.

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>). CMTL<sup>SM</sup> is a leading memory testing organization responsible for testing a broad range of memory products. Memory devices tested by Intel's MVL or CMTL<sup>SM</sup> must undergo rigorous tests to ensure that the product will perform the intended Server and Workstation 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 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 [www.GOLD@cmtlabs.com](mailto:www.GOLD@cmtlabs.com)

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+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 N440BX server boards.

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## Qualified SDRAM Memory for the N440BX Server Board

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This Server product supports the following memory features:

- 168-pin gold-plated SDRAM DIMM modules
- Support for up to 1 GB ECC SDRAM
- 3.3V memory only
- Support for Unbuffered DIMM sizes of 32, 64, 128 MB
- Support for registered DIMM sizes of 64, 128, 256 MB

Memory features are detailed in the *N440BXUP Server Technical Product Specification* available on-line at [www.intel.com/support](http://www.intel.com/support).

The following tables list DIMM devices known to be compatible with the Intel N440BX Pentium® II processor-ready server board. This document and the DIMM list will be updated as qualified memory is added during the life of the N440BX product.

Intel strongly recommends the use of ECC memory in all server systems. The Intel Pentium® II processors used with the N440BX Server board with a 100MHz-system bus must be paired only with 100MHz 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<sup>SM</sup> 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.



## ***N440BX Server Platform***

Unbuffered, 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>
+Samsung	(Old #) KMM374S403CT-GL (New #) M374S0403CT0-C1L00				2/2/98		
Samsung	KMM374S403CT-GO				2/5/98		EOL
Micron	MT18LSDT472AG-10BC4				6/22/98		
Toshiba	THMY7240F1BEG-80				8/4/98		
*Dane Elec	DP100-072042B	HYB39564160AT-8	Siemens	CM-15	1/12/99	A197	EOL
*Dane Elec	DP100-072042B	TMS664164DGE	T.I.	CM-15	1/21/99	A193	EOL
Integritech	IM51M04U7243D4U	MT48LC4M16A2-8EB	Micron	CM-15	5/10/99	A314	EOL
Integritech	IM51M04U7243D4U	MT48LC4M16A2-8EB	Micron	CM-15	5/10/99	A262	EOL

\* For further information contact CMTL at [www.GOLD@cmtlabs.com](mailto:www.GOLD@cmtlabs.com).

+Samsung parts are available under both part numbers.

# *N440BX 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
Samsung	KMM374S823BT-GL				2/8/98		EOL
~H. Co. Computer Products, Inc.	8X72SD4-10HD	KM48S8030AT-G10	Hitachi	168-167200	4/7/98	A085	
Micron	MT9LSDT872AG-10BD2				4/7/98		
Toshiba	THMY7280F1BEG-80				4/21/98		
~H. Co. Computer Products, Inc.	637192475455H93827	HM5264805TTB60	Samsung	168-167203	5/11/98	A089	
NEC	MC-458CA726F-A10				5/28/98		
Mitsubishi	MH8S72AALD-8				6/24/98		
Corsair	CM734S64-BX	KM48S8030BT-GL	Samsung	50-00087A	7/3/98	A146	EOL
Peripheral Enhancements	DM168-33-064M-EP1002SAM	KM48S8030BT-GH	Samsung	168-167203	8/23/98	A091	EOL
Peripheral Enhancements	DM168-33-064M-EP1003SAM	KM48S8030BT-GL	Samsung	168-167203	8/24/98	A093	EOL
Mitsubishi	MH8S72AAFD-8				9/6/98		
*DataRam	DTM60085	D4564841G5-A80-9JF	NEC	40451	9/17/98	A102	
*DataRam	DTM60085	MT48LC8M8A2TG	Micron	40451	9/17/98	A103	
*DataRam	DTM60085	HM5264805TTB60	Hitachi	40451	9/20/98	A101	
*DataRam	DTM60085	TC59S6408BFT-80	Toshiba	40451	9/20/98	A104	
*DataRam	DTM60085	KM48S8030BT-GH	Samsung	40451	9/20/98	A105	
*DataRam	DTM60085	HY57V658020ATC-10P	Hyundai	40451	10/21/98	A126	
*Dane Elec	DP100-072082A	D4564841G5-A80	NEC	CM-14	12/17/98	A178	EOL
*Dane Elec	DP100-072082B	TMS664164DGE	T.I.	CM-15	1/8/99	A192	EOL
*Dane Elec	DP100-072082B	HYB39564160AT-8	Siemens	CM-15	1/24/99	A461	EOL
Integritech	IM49MO8F7243D4T	MT48LC8M8B4-8E	Micron	CM-16	2/25/99	A227	EOL
Mitsubishi	MH8S72BALD-8				4/28/99		
Micron	MT9LSDT872AG-10CD4				5/10/99		
Samsung	KMM374S823CTS-GL				7/13/99		
+Samsung	(Old #) KMM374S823DTS-GL (New #) M37450823DTS-C1L00				9/28/99		
NEC	MC-458CA726LF-A80				10/7/99		
*DataRam	DTM60085	HYB39S64800CT-8	Infineon	40451 rev B	5/8/00	A931	
*Dane-Elec	DP100-072082A	N364804CT3C	IBM	SD6472LC-A	4/17/2001	C681	
*Aved Memory Products	AMP374P0823BTE-C1H/H	HY57V658020BTC-10P-A rev B	Hyundai	105500 rev A	6/1/2001	D212	

\* For further information contact CMTL at [www.GOLD@cmtlabs.com](mailto:www.GOLD@cmtlabs.com).

+Samsung parts are available under both part numbers.

~ Part number/name change/correction.

# *N440BX Server Platform*

Unbuffered, ECC, 100MHz SDRAM DIMM Modules  
128MB Sizes (16Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
Interworks	IW-8E72X18-4-P1	KM48S8030CT-GL	Samsung	16872 A2	1/15/98	A199	EOL
~ H. Co. Computer Products, Inc.	43827P128ECC	HM5264805TTB60	Hitachi	168-167203	5/15/98	A087	
Micron	MT18LSDT1672AG-10CD4				6/17/98		
Fujitsu	PDC16UV7284A103TS				7/6/98		
Corsair	CM734S128-BX	KM48S8030BT-GL	Samsung	50-00087A	7/15/98	A106	EOL
Hitachi	HB52E169EN-B6				7/20/98		
NEC	MC-4516CC726F-A10				7/24/98		
Peripheral Enhancements	DM168-33-128M-EP66SAM	KM48S8030BT-G10	Samsung	168-167203	8/23/98	A095	EOL
Peripheral Enhancements	DM168-33-128M-EP1003SAM	KM48S8030BT-GL	Samsung	168-167203	8/24/98	A094	EOL
Mitsubishi	MH16S72AAMD-8				9/4/98		
*DataRam	DTM60086	D4564841G5-A80-9JF	NEC	40451	9/11/98	A115	
*DataRam	DTM60086	MT48LC8M8A2TG	Micron	40451	9/11/98	A116	
*DataRam	DTM60086	KM48S8030BT-GH	Samsung	40451	9/15/98	A112	
*DataRam	DTM60086	TC59S6408BFT-80	Toshiba	40451	9/15/98	A113	
*DataRam	DTM60086	HM5264805TTB60	Hitachi	40451	9/15/98	A114	
*DataRam	DTM60086	HY57V658020ATC-10P	Hyundai	40451	10/22/98	A125	
Kingston	KGM100X72C3/128	D4564841G5-A10-9JF	NEC	202112-001 C00	11/29/98	A172	
*Dane Elec	~DP100-072162A	D4564841G5-A80	NEC	CM-14	1/21/99	A179	EOL
Integritech	IM49N16F47243D4T	D4564841G5-A80	NEC	CM-14	1/21/99	A368	EOL
Silicon Tech	SL72R4D16M4H-A10AV	D4564441G5-A10-9JF	NEC	00669	2/10/99	A213	
Simple Tech	STI7216118RD1-10AVG	D4564441G5-A10-9JF	NEC	00669	2/10/99	A214	
Integritech	IM49M16F7243D4T	MT48LC8M8B4-8E	Micron	CM-16	3/1/99	A224	EOL
Southland Micro System	SNT 128MB-PC1E	D4564841G5-A80-9JF	NEC	120503	3/11/99	A238	EOL
Unigen Corporation	UG516S7448HC-PH	TC59S6408BFT-80	Toshiba	INTEL 8X8	4/8/99	A294	
Mitsubishi	MH16S72BAMD-8				4/28/99		
Micron	MT18LSDT1672AG-10BD2				5/3/99		
*Samsung	(Old #) KMM374S1623CT-GL (New #) M374S1623CT0-C1L00				6/7/99		
MSC Vertriebs GmbH	MSC872V166D3DT4YDG-8DFSI	HYB39S64800BT-8	Siemens	PCB872V160 03YDTBG0	6/28/99	A382	
MSC Vertriebs GmbH	MSC872V166D3DT4YDG-8DFMI	MT48LC8M8A2TG-8E / C	Micron	PCB872V160 03YDTBG0	9/30/99	A440	

Continued on next page .....

**Unbuffered, ECC, 100MHz SDRAM DIMM Modules**

128MB Sizes (16Mx72) *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>
Memory Card Technology	DM1673VS65804X-103	MB81F6842D-102FN	Fujitsu	650729-G1	1/14/00	A635	
*Dane Elec	DP100-072162A-3	81F64842C-103FN	Fujitsu	PC100-1672	1/20/00	A001	
*Dane Elec	DP100-072162A-3	D4564841G5-A80-9JF	NEC	PC100-1672	2/19/00	A006	
*Dane Elec	DP100-072162A-3	HYB39S64800BT-8 die B	Siemens	PC100-1672	3/28/00	A756	
*DataRam	DTM60086	HYB39S64800CT-8	Infineon	40451 rev B	6/5/00	A933	
*Dane Elec	DP100-072162A-3	TC59S6408CFT-80	Toshiba	PC100-1672	7/27/00	A736	
*Dane-Elec	DP100R072163A	HYB39S64800BT-8	Infineon	16-25600A rev A	7/28/00	A913	
Think Computer Products Inc.	TMINN440BX-128	HYB39S64800CT-8	Infineon	DA-6289 rev. A	10/20/00	B459	
Crucial Technologies	CT16M72S4D8E.M9LT	MT48LC16M8A2TG-8EB	Micron	LE32872 rev. A	10/20/00	B648	
*Dane-Elec	DP100-072162AU2	D4564841G5-A80-9JF	NEC	PC16872 A3 rev. B	11/13/00	B515	
Aved Memory Products	AMP374P1723ATE-C1H/H	HY57V28820AT-P rev A	Hyundai	105500 rev A	2/12/01	C374	
Aved Memory Products	AMP374P1723BTE-C1H/S	K4S280832B-TC1H rev B	Samsung	105500 rev A	3/7/01	C389	
*Dane-Elec	DP100-072163E	KM48S16030T-GL	Samsung	E119697/167 2SYPC100	4/2/01	C688	
*Viking	INT12802	HY57V28820AT-S REV. A	Hyundai	9001601 rev A	5/1/01	C867	
*Aved Memory Products	AMP374P1623BTE-C1H/H	HY57V658020bTC-10P-A rev B	Hyundai	105500 rev A	6/7/2001	D217	

\* For further information contact CMTL at [www.GOLD@cmtlabs.com](mailto:www.GOLD@cmtlabs.com).

~ Part number/name change/correction.

+Samsung parts are available under both part numbers.

## *N440BX Server Platform*

Unbuffered, 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 #) KMM374S3323T-GL (New #) M374S3323MT0-C1L00				8/3/98		
Toshiba	THMY7232G1EG-80	TC59SM708FT-80	Toshiba	2022187-001.A00	3/10/99	A237	
MSC Vertriebs GmbH	MSC872V326D3DT4YDG-10CFSA	KM48S16030T-GL	Samsung	PCB872V16003YD TBG0	6/22/99	A381	EOL
MICRON	MT18LSDT3272AG-10EB1				12/27/99		
+Samsung	~ (Old #) KMM374S3323AT-GL (New #) M37453323ATO-C1L00				01/21/00		
Smart Modular	SM572328574D03P	KM48S16030T-GL rev 0	Samsung	P528168NVBS6G1 A	2/25/00	A704	
Smart Modular	SM572328574D03P	HY57V1298020TC-10S	Hyundai	P528168NVBS6G1 A	6/12/00	A920	
*DataRam	DTM60099	MT48LC16M8A2TG-8E	Micron	40451 rev B	6/28/00	B214	
*DataRam	DTM60099	GM72V28841ALT-7K	Hyundai	40451 rev B	8/29/00	B216	
*Viking	INT25613	K4S280832C-TC1H	Samsung	9001601A	1/5/01	B826	
Aved Memory Products	AMP374P3323BTE-C1H/S	K4S280832B-TC1H rev B	Samsung	105500 rev A	2/28/01	C392	
Aved Memory Products	AMP374P3323ATE-C1H/MV	V54C3128804VAT-7 Rev. A	Mosel-Vitellic	105500 rev. A	3/26/01	C543	
*Dane-Elec	DP100-072323E	D45128841G5-A80-9JF	NEC	PC16872 A3 rev B	3/26/01	C730	
*Dane-Elec	DP100-072322E	MT48LC16MA2-8E	Micron	PC16872 A3 rev B	4/6/01	C723	
*Aved Memory Products	AMP366P3323ATE-C1H/MI	MT48LC16M8A2TG-7E rev A	Micron	105500 rev A	5/4/01	C996	
#Aved Memory Products	AMP374P3323ATE-C1H/H	HY57V28820AT-P rev A	Hyundai	105500 rev A	5/9/2001	D207	
*Dataram	DTM60099(60099Z)(M)	MT48LC16M8A2TG-75 rev E	Micron	40451 rev B	7/18/2001	D664	

~ Part number change/correction.

+Samsung parts are available under both part numbers.

\* For further information contact CMTL at [www.GOLD@cmlabs.com](mailto:www.GOLD@cmlabs.com).

## ***N440BX Server Platform***

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
*Dane Elec	DP100-064042B	HYB39S64160AT-8	Siemens	CM-15	1/14/99	A463	EOL
Integritech	IM51EO4U6443D4U	HYB39S64160AT-8	Siemens	CM-15	1/14/99	A310	EOL
*Dane Elec	DP100-064042B	TMS664164DGE	T.I.	CM-15	1/21/99	A194	EOL

\* For further information contact CMTL at [www.GOLD@cmtlabs.com](mailto:www.GOLD@cmtlabs.com).

~ Part number change/correction.

## ***N440BX Server Platform***

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
~ H. Co. Computer Products, Inc.	8X64SD4-10HD	KM48S8030AT-G10	Samsung	168-167200	4/7/98	A086	
~ H. Co. Computer Products, Inc.	637192475455H	HM5264805TTB60	Hitachi	168-167203	5/11/98	A090	
*Dane Elec	DP100-064082A	D4564841G5-A80	NEC	CM-14	12/17/98	A177	EOL
*Dane Elec	DP100-064082B	TMS664164DGE	T.I.	CM-15	1/9/99	A191	EOL
*Dane Elec	DP100-064082B	HYB39S64160AT-8	Siemens	CM-15	1/20/99	A195	EOL
Integritech	IM51E08U6443D4U	HYB39S64160AT-8	Siemens	CM-15	1/20/99	A375	EOL
Integritech	IM49M08U6443D4T	MT48LC8M8A2-8C	Micron	CM-15	2/6/99	A211	EOL
Integritech	IM50M08U6443D4T	MT48LC8M8B4-8CD	Micron	CM-14	5/2/99	A302	EOL
*Dane-Elec	DP100-064082A	NT56V6610C0T-75B	Nanya	PC16872 A3 rev. B	9/9/00	B477	
*Dane-Elec	DP100-064082AU2	D4564841G5-A80-9JF	NEC	PC16872 A3 rev. B	11/7/00	B510	
Aved Memory Products	AMP366P0823BTE-C1H/H	HY57V658020ETC-10P rev B	Hyundai	105500 rev A	12/11/00	B792	

\* For further information contact CMTL at [www.GOLD@cmtlabs.com](mailto:www.GOLD@cmtlabs.com).

~ Part number/name change/correction.

## ***N440BX Server Platform***

Unbuffered, Non-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>
*Dane Elec	DP100-064162AU1-N	DP100-064162A	NEC	CM-14	1/21/99	A180	EOL
Integritech	IM49M16U6443D4T	MT48LC8M8A2TG-8C		CM-15	2/4/99	A210	EOL
*Dane Elec	DP100-064162A-3	48LCM8A2	Micron	PCBPC100-1672 rev 1	12/3/99	A607	
*Dane Elec	DP100-072162A-3	MT48LC8M8A2TG-8E	Micron	PC100-1672	3/11/00	A742	
*Dane Elec	DP100-064162A-3	TC59S6408CFT-80	Toshiba	PC100-1672	4/19/00	A724	
*Dane Elec	DP100-064162A	D4564841G5-A80-9JF	NEC	PC100-1672 rev 1.0	7/13/00	A717	
*Dane-Elec	DP100-064163AU2	HYB39S64800BT-8	Infineon	PC16872 A3 rev. B	10/2/00	B499	
*Dane-Elec	DP100-064163A	NT56V6610C0T-8A	Nanya	PC16872 A3 rev. B	11/14/00	B495	
Aved Memory Products	AMP366R1723ATE-C1H/H	HY57V2880AT-P rev A	Hyundai	105500 rev A	11/22/00	B700	
Aved Memory Products	AMP366P1723BTE-C1H/S	K4S280832B-TC1H rev B	Samsung	105500 rev A	12/5/00	B705	
Aved Memory Products	AMP366P1623BTE-C1H/H	HY57V658020BTC-10P-A rev B	Hyundai	105500 rev A	12/5/00	B787	
*Viking	INT12805	UPD45128841G5-A80	NEC	9001601 rev A	4/26/01	C925	

\* For further information contact CMTL at [www.GOLD@cmtlabs.com](mailto:www.GOLD@cmtlabs.com).

~ Part number change.

## ***N440BX Server Platform***

Unbuffered, Non-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>
*Dane Elec	DP06432VUE4SPGOU	DP100-064323E	Hitachi	CM-14	2/13/99	A221	EOL
Aved Memory Products	AMP366P3323BTE-C1H/S	K4S280832B-TC1H rev. B	Samsung	105500 rev. A	12/6/2000	B739	
Aved Memory Products	AMP366P3323ATE-C1H/H	HY57V28820AT-P rev. A	Hyundai	105500 rev. A	12/6/2000	B744	
Aved Memory Products	AMP336P3323ATE-C1H/MV	V54C3128804VAT-7 rev. A	Mosel-Vitellic	105500 rev A	3/12/2001	C499	

\* For further information contact CMTL at [www.GOLD@cmtlabs.com](mailto:www.GOLD@cmtlabs.com).

~ Part number change/correction.

## ***N440BX 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>
IBM	IBM13M8734HCB-360T				4/12/98		
Samsung	KMM377S823BT1-GL				6/2/98		EOL
Hitachi	HB52E89E1-B6				7/1/98		
NEC	MC-458DA726F-A80				8/12/98		
Celestica	DG064JLBFM00	MT48LC8M8A2TG-8E	Micron	43115C	3/19/99	A248	EOL
Aved Memory Products	AMP377P0823BT2-C1H/H	HY57V658020BTC-10P-A rev B	Hyundai	105399 rev B`	12/18/00	B990	
*Viking	PE8721R4SN3-UN01	UPD4564841G5-A80	NEC	9001602	2/7/01	C254	

~ Part number/name change/correction.

+Samsung parts are available under both part numbers.

\* For further information contact CMTL at [www.GOLD@cmtlabs.com](mailto:www.GOLD@cmtlabs.com)



# ***N440BX 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>
~ H. Co. Computer Products, Inc.	16X72SD4-10	KM48S8030AT-G10	Samsung	168-167200	4/9/98	A084	
IBM	IBM13M16734BCB-360T				4/12/98		
~ H. Co. Computer Products, Inc.	43827P	HM5264805TTB60	Hitachi	168-167203	5/15/98	A088	
+Samsung	(Old #) KMM377S1620BT1-GL (New #) M377S1620BT1-C1L00				7/8/98		EOL
Hitachi	HB52E169E1-B6				7/19/98		
NEC	MC-4516DA726F-A80				8/9/98		
Peripheral Enhancements	DM168-33-128M-EP1002SAM	KM48S8030BT-GH	Samsung	168-167203	8/23/98	A092	EOL
*DataRam	DTM60089	KM44S16030BT-GH	Samsung	40455	10/30/98	A133	
*DataRam	DTM60089	MT48LC16M4A2TG	Micron	40455	10/30/98	A134	
*DataRam	DTM60089	TC59S6404BFT-80	Hyundai	40455	11/2/98	A136	
*DataRam	DTM60089	HY57V654020ATC-10P	Toshiba	40455	11/21/98	A161	
All Components	AC16X72S8R2	D4564441G5-A80-9JF	NEC	16X72RBX1	3/16/99	A241	
Celestica	DG128JLBFS00	KM48S8030BT-GH	Micron	43115C	3/16/99	A245	EOL
Celestica	DG128JLBFM00	MT48LC8M8A2TG-8E	Samsung	43115C	3/19/99	A246	EOL
+Samsung	(Old #) KMM377S1620CT3-GH (New #) M377S1620CT3-C1H00				5/5/99		
*Viking	MD-460680	HYB39S64400BT-8 / B	Siemens	9001603G	9/23/99	A448	
+SAMSUNG	(Old #) KMM377S1620DT3-GL (New #) M377S1620DT3-C1L00				9/28/99		
MICRON	MT18LSDT1672G-10EC2				10/19/99		
ATP Electronics	AMC16V72E8S4GHS	KM48S8030CT-GH / C	Samsung	SC168EO8V1	11/12/99	A550	
+SAMSUNG	(Old #) KMM377S1620DT3-GH (New #) M377S1620DT3-C1H00				12/16/99		
MSC Vertriebs GmbH	MSC 872S166D3HT4GDG-8DFMI	MT48LC8M8A2TG-8E die C	Micron	872S64003G TBG0 rev 32	2/2/00	A645	
*Dane Elec	DP100-064162A-3	HYB39S64800BT-8	Siemens	PC100-1672 rev 1.0	4/2/00	A712	
*DataRam	DTM60089	HYB39S64400CT-8	Infineon	40455 rev B	6/1/00	A936	
Apacer	71.73325.112	HYB39S64800BT-8 rev B	Infineon	41.16063.01 2 rev 2	7/21/00	B307	
*Viking	PE16721R4SN3-UN04	MT48LC16M8A2-8E REV. B	Micron	9001742 REV.A	2/6/01	C268	
Aved Memory Products	AMP377P1723BT2-C1H/S	K4S280832B-TC1H rev B	Samsung	105399 rev B	2/12/01	C386	

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**Registered, ECC, 100MHz SDRAM DIMM Modules**

128MB Sizes (16Mx72).....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>
Aved Memory Products	AMP377P1723AT2-C1H/H	HY57V28820AT-P rev A	Hyundai	105399 rev B	2/16/01	C380	
*Dataram	DTM60089 (60089Z)	MT48LC16M4A2TG-8E Rev. C	Micron	40455 rev B	4/10/01	C744	
*Aved Memory Products	AMP377P1723AT2-C1H/MI	MT48LC16M8A2TG-7E rev A	Micron	105399 rev B	5/7/01	C989	

~ Part number/name change/correction.

+Samsung parts are available under both part numbers.

\* For further information contact CMTL at [www.GOLD@cmtlabs.com](mailto:www.GOLD@cmtlabs.com)

# N440BX 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
IBM	IBM13M32734BCC-360Y				4/13/98		
StakTek	SM401S012LBSAG-HAC	SS232X400030BSG	Samsung	12201-02	6/23/98	A083	EOL
Dynamem	D626D3273DS4U4410	KM44S16030BT-G10	Samsung	168-327200	6/29/98	A082	EOL
Hitachi	HB52R329E2-B6				6/29/98		
DensePac	DPSD32MS72RW5-10C	KM44S16030AT-G10	Samsung	70A190A	7/3/98	A081	EOL
Kentron	KT3272SFN0R14	MT48LC16M4A2-8C	Micron	3272SFN	7/6/98	A119	EOL
+Samsung	(Old #) KMM377S3227BT1-GL (New #) M377S3227BT1-C1L00				7/8/98		
*DataRam	DTM60087	TC5956408BFT-80	Toshiba	40453	9/11/98	A117	
Corsair	CM754S256-BX/S	KM44S16030BT-GL	Samsung	50-00091A	9/17/98	A107	EOL
Corsair	CM744S256-BX/S	KMM44S16030BT-GL	Samsung	50-00092A	11/4/98	A145	EOL
*DataRam	DTM60087	KM44S16030BT-GH	Samsung	40453	11/20/98	A160	
Silicon Tech	SL72R4G32M4H-A10AV	TC5956404BFT-80	Toshiba	00734	2/10/99	A216	
Simple Tech	STI7232118IRD2-10AVG	TC59S6404BFT-80	Toshiba	00734	2/10/99	A215	
Southland Microsystem	SNT 256MB-PC1EP	HM5264405TTB60	Hitachi	09-7370	4/9/99	A295	EOL
+Samsung	(Old #) KMM377S3323T-GL (New #) M377S3323MT0-C1L00				5/5/99		
Centon Electronics	CINT256M/RP100S	V54C365404VBT8PC	Mosel-Vitellic	CPCB-00401	5/25/99	A378	
Qestec	Q3272P4SG0836L3	MB81F64442C-102FN	Fujitsu	105349B	6/7/99	A379	
Interworks	IW8KG72X36-001	MT48LC16M4A2TG-8E	Micron	03-0145G	7/14/99	A427	EOL
Interworks	IW8G72X36-001	5264405DTTA60	Hitachi	105349	7/19/99	A024	EOL
ATP Electronics	AMR32V72F8S4GLS	KM48S16030T-GL / 1	Samsung	SR168F08V1	11/8/99	A551	
*DataRam	DTM60287	MT48LC16M8A2TG-8E	Micron	40454 rev C	2/9/00	A637	
Silicon Tech	INT72R8E32M4H-A10D	D45128841G5-A80 die A	NEC	668 rev A	3/4/00	A776	
Simple Tech	~ SINT7232118ARD2-10DVG	D45128841G5-A80 die A	NEC	668 rev A	3/4/00	A775	
*DataRam	DTM60287	HY57V1298020TC-10P	Hyundai	40454 rev C	3/18/00	A639	
MSC Vertriebs GmbH	MSC872S32AD3HT4GDG-8DFMI	MT48LC16M8A2TG-8E	Micron	MSC872S64003 GTBG0	5/13/00	B027	
Apacer	71.84325.412	MT48LC16M8A2TG-8E	Micron	48.16063.002	9/19/00	B410	
Think Computer Products Inc.	TMINN440BX-256R	MT48LC16M8A2-8E rev. B	Micron	KO-6178 Rev. A	9/22/00	B465	
*Dane-Elec	DP100R072323E	D45128841G5-A80-9JF	NEC	16-25600B rev. B	10/5/00	B434	
*Dane-Elec	DP100R072322E	D45128841G5-A80-9JF	NEC	16-25600B rev. B	10/2/00	B440	
*Dane-Elec	DP100R072323E	K4S280832B-TC1H	Samsung	16-25600B rev.B	10/7/00	B563	
*Dane-Elec	DP100R072322E	K4S280832B-TC1H	Samsung	16-25600B rev.B	10/26/2000	B568	
*Dane-Elec	DP100R072323E	TC59SM708FT-80	Toshiba	16-25600B rev. B	11/15/00	B692	
*Dane-Elec	DP100R072322E	TC59SM708FT-80	Toshiba	16-25600B rev B	12/14/00	B687	
*Dane-Elec	DP100R072322E	HYB39S128800CT-8	Infineon	16-25600B rev B	1/4/01	B950	
*Dane-Elec	DP100R072323E	HYB39S128800CT-8	Infineon	16-25600B rev B	1/9/01	B958	

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## Registered, ECC, 100MHz SDRAM DIMM Modules

256MB Sizes (32Mx72) Continued.....

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
Aved Memory Products	AMP377P3323BT2-C1H/S	K4S280832B-TC1H rev B	Samsung	105352 rev B	2/19/01	C397	
*Dataram	DTM60287(60087Y)	MT48LC16M8A2TG-75 REV. B	Micron	40454 REV. C	2/22/01	C297	
Aved Memory Products	AMP377P3323AT2-C1H/H	HY57V28820AT-P rev A	Hyundai	105352 rev B	2/27/01	C403	
Aved Memory Products	AMP377P3323AT2-C1H/MV	V54C3128804VAT-7 rev. A	Mosel-Vitellic	105352 rev A	3/9/2001	C505	
Aved Memory Products	AMP377P3323AT2-C1H/MI	MT48LC16M8A2TG-7E rev A	Micron	105352 rev B	6/15/2001	D066	
Dataram	DTM60189(M)(60189Z)	MT48LC16M8A2TG-75 rev E	Micron	40532 rev B	6/22/2001	C902	

~ Part number change/correction.

+Samsung parts are available under both part numbers.

\* For further information contact CMTL at [www.GOLD@cmtlabs.com](mailto:www.GOLD@cmtlabs.com)

## *Distributor Information*

### **ASIA**

<b>Vendor Name</b>	<b>Distributor Name</b>	<b>Contact Name</b>	<b>Phone Number</b>	<b>Fax Number/E-Mail</b>
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				<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	
H. Co. Computer Products, Inc.	Direct Sales	Gary Richardson	800-726-2477, ext. 153	<a href="mailto:Grichardson@hco.com">Grichardson@hco.com</a>
InterWorks Computer Products	Direct Sales		949-599-0100	949-599-0113
Kingston				<a href="http://www.kingston.com/partners/default.asp">http://www.kingston.com/partners/default.asp</a>
MSC Vertriebs GmbH	MSC (Malta) LTD.	Marcel Dalli	++356 48 48 04	
MSC Vertriebs GmbH	MSC (Turkey) Liaison Office	Ilker Balci	++90 (0)216- 4188792(3Hat)	
Viking Components			++65.235.8832	
Samsung				<a href="http://www.korea.samsungsemi.com/top/contactus/contactus_index.htm">http://www.korea.samsungsemi.com/top/contactus/contactus_index.htm</a>

## 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				<a href="http://www.corsairmicro.com/sales.htm">http://www.corsairmicro.com/sales.htm</a>
Dane-Elec			(353) 91 55 30 00	<a href="http://www.sales@dane-elec.com/">http://www.sales@dane-elec.com/</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	
H. Co. Computer Products, Inc. Germany [Note: Alternate P.O.C.]		Manuch Mannani [Alternate P.O.C. Shaan Rad]	0130-858306 / 0531-53533 [Alternate P.O.C. 800-726-2477]	
InterWorks Computer Products	Direct Sales		949-599-0100	949-599-0113
Kingston				<a href="http://www.kingston.com/partners/default.asp">http://www.kingston.com/partners/default.asp</a>
MSC Vertriebs GmbH	MSC (Germany) Vertriebs GmbH	William Perrigo	++49 (0)7249-910 417	
MSC Vertriebs GmbH	MSC (France) S.A.R.L.	Claude Antoine	++33 (0)1 64805555	
MSC Vertriebs GmbH	MSC (Netherlands) BV.	Philip L. Veenhoven	++31 (0)78-6920153	
MSC Vertriebs GmbH	MSC (UK) LTD.	Nick Putnam or Rupert Johnson	++44 (0)1273-622446	
MSC Vertriebs GmbH	MSC (Scotland) LTD.	Ewan Robertson	++44 (0)1506-460 555	
MSC Vertriebs GmbH	MSC (Switzerland) Vertriebs GmbH	Claude Antoine	++41 (0)21-9653500	
MSC Vertriebs GmbH	MSC (Italy) Veretriebs GmbH	Massimo Oriano	++49 (0)7249-910 425	
MSC Vertriebs GmbH	MSC (Turkey) Liaison Office	Ilker Balci	++90 (0)216-4188792 (3 Hat)	
MSC Vertriebs GmbH	MSC CZ (Czech Rep.) S.R.O.	Jaroslav Mrhalek	++42 (0)634-335620	
Samsung				<a href="http://www.korea.samsungsemi.com/top/contactus/contactus_index.htm">http://www.korea.samsungsemi.com/top/contactus/contactus_index.htm</a>
Silicon Tech Inc.	Microtronica-Sweden	Jorgen Carlsson	00 46 86 807800	<a href="http://www.silicontech.com/contact/salescontacts.shtml">http://www.silicontech.com/contact/salescontacts.shtml</a>
Silicon Tech Inc.	Microtronica-Denmark	Brigitte Kraglund	00 45 44 508100	<a href="http://www.silicontech.com/contact/salescontacts.shtml">http://www.silicontech.com/contact/salescontacts.shtml</a>
Silicon Tech Inc.	Eurodis Bytech	Carol Boycott	00 44 1256 379312	<a href="http://www.silicontech.com/contact/salescontacts.shtml">http://www.silicontech.com/contact/salescontacts.shtml</a>
Silicon Tech Inc.	Eurocomposant	Julie Fichot	00 33 130649515	<a href="http://www.silicontech.com/contact/salescontacts.shtml">http://www.silicontech.com/contact/salescontacts.shtml</a>

**Europe-Continued**

<b>Vendor Name</b>	<b>Distributor Name</b>	<b>Contact Name</b>	<b>PhoneNumber</b>	<b>Fax Number/E-Mail</b>
Silicon Tech Inc.	NBN System Components	Adalbert Reidle	00 49 815292360	<a href="http://www.silicontech.com/contact/salescontacts.shtml">http://www.silicontech.com/contact/salescontacts.shtml</a>
Simple Tech				<a href="http://www.simpletech.com/about/buyprod.html">http://www.simpletech.com/about/buyprod.html</a>
Smart Modular				<a href="http://www.smartm.com/howtobuy.html">http://www.smartm.com/howtobuy.html</a>
Southland Microsystems				<a href="http://www.southlandmicro.com/index2.html">http://www.southlandmicro.com/index2.html</a>
Unigen Corporation	Taiwan Branch Office		886-2-2698-0818	<a href="mailto:unigen@ms15.hinet.net">unigen@ms15.hinet.net</a>
Viking Components			++353.1.466.0090	<a href="http://www.viking.ie/">http://www.viking.ie/</a>

## 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				<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	
H. Co. Computer Products, Inc.		Gary Richardson	800-726-2477, ext. 153	Grichardson@hco.com
InterWorks Computer Products	Direct Sales		949-599-0100	949-599-0113
Kingston				<a href="http://www.kingston.com/partners/default.asp">http://www.kingston.com/partners/default.asp</a>
Micron				<a href="http://www.micron.com/mi/misp/html/salesint.html">http://www.micron.com/mi/misp/html/salesint.html</a>
MSC Vertriebs GmbH	MSC (Germany)Vertriebs GmbH	William Perrigo	++49 (0)7249-910 417	email: <a href="mailto:wpe@msc-ge.com">wpe@msc-ge.com</a>
Samsung				<a href="http://www.korea.samsungsemi.com/top/contactus/contactus_index.htm">http://www.korea.samsungsemi.com/top/contactus/contactus_index.htm</a>
Simple Tech				<a href="http://www.simpletech.com/about/buyprod.html">http://www.simpletech.com/about/buyprod.html</a>
Southland Microsystems				<a href="http://www.southlandmicro.com/index2.html">http://www.southlandmicro.com/index2.html</a>



## 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				<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	
H. Co. Computer Products, Inc.		Gary Richardson	800-726-2477, ext. 153	Grichardson@hco.com
InterWorks Computer Products	Direct Sales		949-599-0100	949-599-0113
Kingston				<a href="http://www.kingston.com/partners/default.asp">http://www.kingston.com/partners/default.asp</a>
Micron				<a href="http://www.micron.com/mti/msp/html/salesint.html">http://www.micron.com/mti/msp/html/salesint.html</a>
Samsung				<a href="http://www.korea.samsungsemi.com/top/contactus/contactus_index.htm">http://www.korea.samsungsemi.com/top/contactus/contactus_index.htm</a>
Silicon Tech				<a href="http://www.simpletech.com/about/buyprod.html">http://www.simpletech.com/about/buyprod.html</a>
Simple Tech				<a href="http://www.simpletech.com/about/buyprod.html">http://www.simpletech.com/about/buyprod.html</a>
Southland Microsystems				<a href="http://www.southlandmicro.com/index2.html">http://www.southlandmicro.com/index2.html</a>
MSC Vertriebs GmbH	MSC (Germany)Vertriebs GmbH	José-Ramón Rodríguez-Torrado	++49 (0)7249-910 423	email: <a href="mailto:rto@msc-ge.com">rto@msc-ge.com</a>

## North America

Vendor Name	Distributor Name	Contact Name	PhoneNumber	Fax Number/E-Mail
ATP Electronics, Inc	ATP Electronics, Inc. -U.S.A.	Martha Wu	408-732-5000	408-732-5055
Celestica			1-888-899-9998	<a href="mailto:memoriesales@celestica.com">memoriesales@celestica.com</a>
Centon Electronics		John Hardacre	800-234-9292	
Corsair				<a href="http://www.corsairmicro.com/sales.htm">http://www.corsairmicro.com/sales.htm</a>
Dane-Elec			(714) 727 9093	<a href="mailto:sales@dane-memory.com">sales@dane-memory.com</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	
H. Co. Computer Products, Inc.		Gary Richardson	800-726-2477, ext. 153	Grichardson@hco.com
InterWorks Computer Products	Direct Sales		949-599-0100	949-599-0113
Kingston				<a href="http://www.kingston.com/partners/default.asp">http://www.kingston.com/partners/default.asp</a>
Micron				<a href="http://www.micron.com/mti/msp/html/salesna.html">http://www.micron.com/mti/msp/html/salesna.html</a>
MSC Vertriebs GmbH	MSC (UK) LTD.	Nick Putnam	++44 (0)1273-622 446	email: <a href="mailto:np@msc-ge.com">np@msc-ge.com</a>
MSC Vertriebs GmbH	MSC (UK) LTD.	Rupert Johnson	++44 (0)1273-622 446	email: <a href="mailto:rjo@msc-ge.com">rjo@msc-ge.com</a>
MSC Vertriebs GmbH	MSC (Scotland) LTD.	Ewan Robertson,	++44 (0)1506-460 555	email: <a href="mailto:ero@msc-ge.com">ero@msc-ge.com</a>
MSC Vertriebs GmbH	MSC (Germany)Vertriebs GmbH	William Perrigo,	++49 (0)7249-910 417	email: <a href="mailto:wpe@msc-ge.com">wpe@msc-ge.com</a>
Samsung				<a href="http://www.korea.samsungsemi.com/top/contactus/contactus_index.htm">http://www.korea.samsungsemi.com/top/contactus/contactus_index.htm</a>
Silicon Tech Inc.	Pioneer Standard	Laurie Boyd	(408) 586-5693	<a href="http://www.simpletech.com/about/buyprod.html">http://www.simpletech.com/about/buyprod.html</a>
Silicon Tech Inc.	Bell Microproducts	Gary Lewis	(408) 451-1684	<a href="http://www.simpletech.com/about/buyprod.html">http://www.simpletech.com/about/buyprod.html</a>
Silicon Tech Inc.	Reptron Electronics, Inc.	Patricia Hirshey	(813) 854-6373	<a href="http://www.simpletech.com/about/buyprod.html">http://www.simpletech.com/about/buyprod.html</a>
Silicon Tech Inc.	Wyle Electronics	Donna Fisher	(949) 788-3723	<a href="http://www.simpletech.com/about/buyprod.html">http://www.simpletech.com/about/buyprod.html</a>
Simple Tech				<a href="http://www.simpletech.com/about/buyprod.html">http://www.simpletech.com/about/buyprod.html</a>
Southland Microsystems				<a href="http://www.southlandmicro.com/index2.html">http://www.southlandmicro.com/index2.html</a>
Unigen Corporation	Corporate Headquarters/Sales		1-800- 826-0808 510-668-2088	<a href="mailto:sales_info@unigen.com">sales_info@unigen.com</a>
Viking Components			800.338.2361 949.643.7255	<a href="http://www.vikingcomponents.com/company/offices.html">http://www.vikingcomponents.com/company/offices.html</a>

## Computer Memory Test Labs (CMTL<sup>SM</sup>) Memory Testing

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

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<sup>SM</sup> 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<sup>SM</sup> 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<sup>SM</sup> 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<sup>SM</sup> with Intel server products and test procedures defined by Intel's Memory Qualification Lab. Intel routinely audits the CMTL<sup>SM</sup> facility to ensure all procedures, process handling, and testing methodologies are met.

## *Intel<sup>®</sup> Product Dealers*

The Intel Product Dealer program was designed to support system integrators worldwide 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/business/america/ipd/>.

### **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<sup>®</sup> II processors. This listing is not intended to be all inclusive; it only represents the DIMMs Intel or CMTL<sup>SM</sup> 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 N440BX 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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