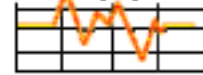


# RAMCHECK®

Test Equipment Depot



99 Washington St.  
Melrose, MA 02176  
FAX 781-665-0780

1-800-517-8431 TestEquipmentDepot.com

**The latest breakthrough in  
memory testing technology has arrived!**



INNOVENTIONS, the company that developed the world's first portable DRAM tester and set the standard in portable test equipment with the SIMCHECK line of products, now brings you RAMCHECK, the latest in reliable and affordable memory testing technology today.

Highly modular and user friendly, RAMCHECK and its optional adapters redefine the capabilities of an affordable and portable memory tester. The newly designed test engine and scaleable data interface provide faster tests and higher accuracy of timing measurements. RAMCHECK's architecture has been optimized to better support the memory devices of today and tomorrow. It comes with PC Communication software that allows it to print and log test reports, and to update its stand-alone firmware via the Internet.

**You are in good company!** Over the last decade, SIMCHECK product users include most of the Fortune 500 companies as well as thousands of small companies demanding value and reliability. And to support our loyal customers, we have designed the new RAMCHECK so that every SIMCHECK II or its derivative can be affordably upgraded to the RAMCHECK level.

 **INNOVENTIONS,® Inc.**  
"INNOVATIVE PRODUCTS FROM INVENTIVE MINDS"  
[www.innoventions.com](http://www.innoventions.com)

Powerful!  
Easy To Read!

# RAMCHECK® SCREEN IMAGES

## FEATURES & BENEFITS

- Saves you time by quickly testing your memory on RAMCHECK, not inside your computers.
- Saves you money by checking and identifying all your expensive inventory of memory modules.
- Don't let RAMCHECK's small size and low cost deceive you! It's 184MHz test engine, parallel data access capability, and state-of-the-art timing circuitry provides you with features heretofore available only in expensive desktop testers.
- RAMCHECK's modular design and its variety of existing and planned adapters provide you with broad coverage of today's and future memory technologies.
- Easy to learn and easy to use. Provides size, speed, type and detailed structure information with a single push of a button. Automatic tests provide full support for SDRAM/EDO/FPM without the need for special setup.
- Use it as a stand-alone tester, or connect it to your PC via the built-in serial interface and the free PC Communication program that allows you to log test results and to print hard copies.
- Fully and quickly test PC133 SDRAM technology at actual clock speeds, with automatic PC133/100/66 detection.
- Setup for user-defined tests and parameters fulfill the requirements of advanced users.
- Quickly change test parameters using the change-on-the-fly feature.
- RAMCHECK and its optional adapters come with high-quality Zero-Insertion-Force sockets for convenient handling.
- Upgrade the test firmware easily via the Internet at no additional cost.
- Gain support for Serial Presence Detect (SPD) data, including reading, editing, and programming.
- 100-240 VAC 50/60Hz universal switching power supply included.

**Test Reports**

Prompts the user to begin the test by pressing F1.

16Mx64'S STRUCTURE:  
BANKS:2 -3:0+1+2+3  
CHIP SIZE: 4x2Mx8  
SDRAM 168P UNBUFFERED

Structure information indicates which control signals are used.

OK BASIC TEST OK  
32Mx64=256M  
100MHZ UB  
SDRAM 4-clk

Clearly identifies good and bad modules.

8Mx64'S SPEED: 133MHZ  
TEST=PC-133  
PAGE BURST=133MHZ  
SPD=PC-133

Summary screens inform whether module is PC-133 compliant.

BANK 1: DATA BITS  
B1 B4  
JEDEC:DQ22 PIN=21

Scrollable error menus provide error details plus its associated pin number.

ACCESS TIME FROM CLK  
TaC (CL=3): 5.0nS  
TaC (CL=2): 5.0nS  
TaC RANGE: <PC-133>

Reports individual access times from the clock at both CAS latency 2 and 3.

ADDRESS PINS STUCK:  
CONTINUE END  
P14/P7=A2 at 1  
ERROR 1 OF 2

Displays address wiring errors.

8Mx64'S SPEED: 100MHZ  
TEST=PC-100  
PAGE BURST=100MHZ  
SPD=PC-100

Identifies PC-133/100/66 modules.

DEVICE TYPE WARNING:  
ASYMMETRIC 4K REFRESH  
12 ROWS 10 COLUMNS

Clearly indicates variations from standard devices.

UNEQUAL SIZES

Reports unequal bank sizes.

**Test Phases**

BASIC TEST AAAAAAA  
BYTES: B1 IXXXXXXXXX B9  
00:05.2 100MHZ UB  
32Mx72 SDRAM B2/0

BASIC Test checks wiring & memory cells. (Shown: 3V Unbuffered module running at 100MHz.)

VOLTAGE BOUNCE  
WRITE AAAAAAA  
00:12.1 55/125nS  
16Mx64 3.00V B1/1

VOLTAGE BOUNCE tests data retention during voltage variation between read & write.

EXTENSIVE TEST  
XXXXXXXXXXXX

EXTENSIVE Test performs various tests to establish memory quality.

MARCH UP/DOWN  
MARCH DOWN 55555555  
00:04.7 63/150nS  
16Mx72 4.50V B1/0

MARCH UP/DOWN reveals adjacent cell interference problems.

VOLTAGE CYCLING  
BYTES: B1 IXXXXXXXXX B9  
00:02.3 53/120nS  
16Mx72 5.00V B2/1

VOLTAGE CYCLING performs tests under all allowable voltage conditions.

CHIP-HEAT MODE  
1.15A  
01:11.7 133MHZ  
32Mx72 3.30V

CHIP HEAT MODE tests at actual operational temperatures.

MODE TEST  
CL=3 BL=1+2+4+8+FULL  
CL=2 BL=1+2+4+8+FULL  
16Mx64 3.30V

MODE Test identifies burst lengths at CAS latency of 2 and 3.

AUTO-LOOP 33CC33CC  
LOOP#3980 B2/0  
19:30:46.3 133MHZ  
16Mx72 3.15V SDRAM

AUTO LOOP tests memory with endless pattern changes. Great for burn-in.

**Test Log**

TEST LOG  
BASIC TEST  
TEST AT 5V  
SIZE: 16Mx64=128M

Detailed test logs reveal results after each test.

CHIP SIZE: 4x2Mx8  
SPEED: 166MHZ  
CLOCKS: 4-clk  
SINGLE WRITE OK

Review stored results on a scrollable display.

TEST=PC-133  
FINAL SPEED: 133MHZ  
BASIC TEST OK  
TIME: 00:26.3

Final speed and test time is recorded.

**Setup**

SETUP PARAMETERS  
SIZE QUIT  
TIMING AUTO  
VOLTAGE MORE

Clear and interactive menus.

SETUP LIST  
SETUP SIZE: 316Mx72  
SETUP SPEED: 100MHZ  
VOLTAGE SETUP: 3.3V

Detailed SETUP LIST tracks all default program changes.

SKIP TESTS:  
ENTER ABORT  
VOLTAGE CYCLING  
SKIP THIS TEST

Test Flow Setup allows for test flow customization.

-RAS  
ADD  
-CAS  
Trcd= 21nS

Graphic timing parameter setup pleases the most advanced users.

SETUP SPEED:  
166MHZ  
ENTER ABORT  
184MHZ

Frequency Setup for SDRAM DIMMs.

SETUP MAIN PATTERNS  
ENTER ABORT  
PATT1: B5B5B5

Program your own test patterns used throughout the test.

**Change-On-The-Fly**

CHANGE-ON-THE-FLY:  
SPEED RETURN  
VOLTAGE  
REFRESH

Make ON-THE-FLY parameter changes with the push of a button.

TEST OUT AT 5V  
- NOT FOR 3.3V RAM!  
5V RAM FAIL OR SLOW

ON-THE-FLY changes include voltage variation from 5V to 3V & vice versa.

SPEED OVERRIDE:  
56nS  
ENTER ABORT  
RAS ACCESS: 56nS

A one-time speed override allows you to change the tested access time.

**SPD Management**

SPD MANAGEMENT:  
READ SPD  
SHOW BUFFER  
PROGRAM VERIFY

Allows you to read, edit & program your module's SPD device.

PROGRAMMING...  
(16-BYTE PAGE) \*\*\*  
OK

Three different SPD programming modes are available. SPD data can be saved to disk via the PC Interface.

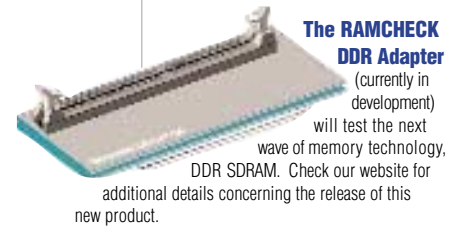
SPD VIEWER  
SERIAL PRESENCE  
DETECT - 256 BYTES:  
0-3:0D 08 02 0A

The SPD buffer allows you to review previously read SPD data.

# RAMCHECK® OPTIONAL ADAPTERS

Don't let RAMCHECK's compact size deceive you! With its four expansion sockets, RAMCHECK is a highly expandable and modular tester. In addition to the add-on devices shown on this page, we are continuously developing more optional adapters to support future memory technologies.

Please visit [www.innoventions.com](http://www.innoventions.com) to review the latest additions to our product line.



**The RAMCHECK DDR Adapter**

(currently in development)

will test the next wave of memory technology, DDR SDRAM. Check our website for additional details concerning the release of this new product.



**RAMCHECK SIMM Adapter**

is for testing older 72-pin SIMM modules. It can also come with an optional test socket for 30-pin SIMMs, as shown.



**Direct Printer Interface**

Although you can print all test reports via the PC Interface included with RAMCHECK, the optional Direct Printer Interface allows you to print directly from RAMCHECK to a printer without the need for a PC connection.



**RAMCHECK 144 Adapter**

supports 144-pin SDRAM/EDO/FPM modules with configurations of 64 and 72 bits.



**RAMCHECK Sync Chip Adapter**

supports popular TSOP chips in sizes of 16Mx16, 4Mx16, 32Mx8, 8Mx8, 64Mx4, 16Mx4 and more. Shown with all optional sockets.

## RAMCHECK PC COMMUNICATION

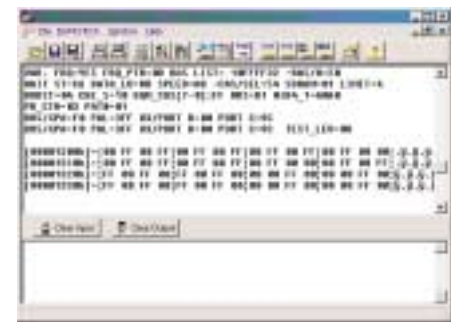
RAMCHECK and SIMCHECK are stand-alone products. However, they both include built-in serial interface ports and come with free PC Communication software that allows you to optionally interface the tester to your PC. Such an interface enables you to upgrade the firmware online, print test reports, program SPD devices, and much more.

### REALTIME INTERFACE



The Realtime Interface allows you to print and log test results, with full control of RAMCHECK via the PC. A much more detailed test log and additional measurements are viewable on the PC screen compared to the tester's display. You can also jump from one test phase to another with great ease.

### ADVANCED DIAGNOSTICS



Advanced users can obtain more detailed data about the structure of the tested devices using the various debug modes of the tester.

### FIRMWARE DOWNLOAD



The Firmware Download program allows you to update your RAMCHECK firmware with our latest test program as posted on our web site. If your computer has a direct connection to the Internet, this process is done automatically once you click the automatic download button. Alternatively, you can use the manual download mode if you obtain the firmware file using a different computer.

### SPD PROGRAMMING



Memory manufacturers and advanced users have the ability to program and edit SPD devices using the PC Communication program. The program provides full on-screen support for reading, editing, programming and file handling of all your SPD devices. The special production mode allows automatic programming of the SPD of a tested module in accordance with a master SPD file.

### RAMCHECK SETUP



The PC Communication software further enables you to setup your RAMCHECK and customize it using an intuitive setup interface on your PC screen. The software also provides you with the ability to save all of your various parameter settings to a disk file for future use.