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Macintosh 5xxx/6xxx: Microprocessor Issue (4/97)

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Security: Everyone

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TOPIC -----

This article covers two topics - 1) Running the 5xxx/6xxx Tester application when experiencing system freezing on selected Performa and Power Macintosh computers.

2) This article describes an issue with some PowerPC 603 microprocessors installed on a limited number of Macintosh and Performa 5200 and 6200 series computers. Previously, this required the use of the 52xx/62xx Diagnostic Utility, which has since been removed.

DISCUSSION -----

1) The 5xxx/6xxx Tester should be used to test for known component issues that may cause system freezing in ALL Power Macintosh and Performa 5200, 5300, 6200, and 6300 series computers, including the Apple Power Macintosh 5200/75 LC and 5300/100 LC, and Macintosh Performa 5200, 5215, 5300, 6200, 6205, 6214, 6216, 6218, 6220, 6230, 6290 and 6300. (The recently introduced Power Macintosh 5260 and 6320 are not included in this program because Apple corrected all the known issues with this product prior to manufacturing.) The 5xxx/6xxx Tester is available on America Online (keyword: applecomputer) CompuServe (GO APLSUP) and on the Internet at:

ftp://ftp.info.apple.com/Apple.Support.Area/Apple.Software.Updates/US/Macintosh/Utilities/5xxx-6xxx_Tester_1.0.sea.hqx

2) The 52xx/62xx Diagnostic Utility was made available to detect an issue with a small number of PowerPC 603 microprocessors used in ONLY Macintosh Performa 5200, 6200, and Power Macintosh 5200/75 LC computers. Only computers within a specific serial number range were potentially affected by this issue. The Diagnostic Utility was posted on the online services, but it has since been removed with the posting of the 5xxx/6xxx Tester. Below is some additional information on this original problem.

PowerPC 603 Microprocessor Statement

Apple and Motorola have recently found that a small number of PowerPC 603 microprocessors used in Macintosh Performa 5200, 6200, and Power Macintosh 5200/75 LC systems may have a problem. Fewer than 1 in 1000 of these systems may have a PowerPC 603 processor problem which was not detected in test procedures at the microprocessor design facility and at Apple. No customer has reported this issue to Apple that we are aware of.

Only Macintosh Performa and Power Macintosh LC models in the 5200 and 6200 series with serial numbers in the following ranges could be impacted:

5200 Series Computers

XB514xxxxxxx - XB529xxxxxxx
SO514xxxxxxx - SO529xxxxxxx
SG523xxx - SG527xxx
numbers less than CK533xxxxxxx

6200 Series Computers

XB528xxxxxxx - XB529xxxxxxx
SO528xxxxxxx - SO529xxxxxxx
SG510xxx - SG528xxx
numbers less than CK533xxxxxxx

Computers outside the above serial number ranges have been screened with additional test procedures and do not have this problem. No other Power Macintosh, Power Macintosh LC, Performa, or PowerBook computers experience this problem.

On September 21, 1995, Apple posted a diagnostic utility called "52xx/62xx Diagnostic Utility" that checks for this potential problem to a number of online services including the internet and CompuServe. This application was removed when the 5xxx/6xxxx Tester was posted.

Apple Service inventory has been tested and does not have this problem.

Below is a Q & A which may answer more of your questions.

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Question: How does this problem manifest itself?

Answer: Tests indicate it may affect the Graphing Calculator application, or other PowerPC native applications using specific mathematical operations in a specific sequence. In some cases it may cause an application to unexpectedly freeze.

Question: Does it impact spreadsheet applications?

Answer: Although we have not been able to duplicate this problem with these applications, it is possible.

Question: What are the serial numbers affected?

Answer:

5200 Series Computers

XB514xxxxxxx - XB529xxxxxxx

SO514xxxxxxx - SO529xxxxxxx

SG523xxx - SG527xxx

numbers less than CK533xxxxxxx

6200 Series Computers

XB528xxxxxxx - XB529xxxxxxx

SO528xxxxxxx - SO529xxxxxxx

SG510xxx - SG528xxx

numbers less than CK533xxxxxxx

Question: When will customers be alerted?

Answer: On September 21,1995, Apple will post the diagnostic utility on various online services along with this document.

Question: How will customers be alerted?

Answer: We are notifying our customers in a number of ways. Each company has posted a diagnostic test on various online services, including Apple and Motorola home pages on the World Wide Web, and CompuServe. Customers can download and run this diagnostic on their computer to determine if it is one of the few that may have a PowerPC 603 processor with a problem.

Customers in America or Canada without access to an online service can call Apple at 800-785-7371 (7:00am-7:00pm, Mountain Standard Time) to have the diskette with the diagnostic utility sent to them within two business days. International customers should contact their local Apple service center.

Question: What are the specific online paths to the diagnostic?

Answer: The diagnostic, along with a ReadMe and a Q & A document, are included in a file titled "52XX/62XX Diagnostic Util.SEA" posted to the following locations:

America Online:

keyword: applecomputer

CompuServe:

Apple Support Forum (GO APLSUP) contains all software and information libraries
Apple Most Popular files (GO APLNEW)

Internet:

World Wide Web: <<http://www.info.apple.com/swupdates>>
ftp: <<ftp://ftp.info.apple.com>>

Question: If customers determine their system contains the problematic PowerPC 603 processor, what should they do?

Answer: If the customer runs the diagnostic utility and it confirms that the system has a potentially problematic PowerPC 603 processor, and their computer has a serial number in the specified range, Apple will replace their logic board at no cost.

The customer may bring their computer to an Apple Authorized Service Provider or call 1-800-780-0957, before December 31, 1995, to schedule a service call. After that date, customers should call their service provider or 1-800-SOS-APPL for service.

International customers should contact their local Apple service center for replacement of their logic board, should it be necessary.

Question: Is this like the Pentium bug?

Answer: No it is not. The Pentium issue was inherent in the Pentium microprocessor design. Every Pentium had this problem before a modification to the design was made.

In this instance with the PowerPC 603 processor, there is no design flaw in the PowerPC 603 processor itself. Instead, a few problematic units that should have been rejected were not identified by the test procedures. Apple and Motorola reacted quickly to research and identify the problem. Both companies have instituted revised test procedures for the PowerPC 603 processor to ensure all current shipping systems are unaffected by this issue.

Question: What have you done since you discovered the problem?

Answer: Additional tests have been implemented at both the chip design and manufacturing facilities, and at Apple to catch this problem. Apple and Motorola are now extensively testing the PowerPC 603 processor to ensure all current shipping systems are unaffected by this issue.

Question: How many units could be affected?

Answer: We believe the total number of units worldwide to be well below 500.

Article Change History:

02 Apr 1997 - Removed reference to specific on line services

31 Jan 1997 - Major revision to article, adding info on current 5xxx/6xxx
Tester

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