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Macintosh IIci: Causes for IIci Incompatibilities (Part 4 of 4)

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TOPIC -----

This is part four of a four part article detailing the changes which caused the compatibility problems the Macintosh IIci faced. A significant number of Macintosh IIci compatibility problems were related to the improvements outlined below. Keep in mind that the majority of applications were not affected by these changes and that most of those that were have been updated.

DISCUSSION -----

Leading Causes for Macintosh IIci Incompatibilities (Con't)

5) ADB manager

In an effort to reinforce the ADB standard, protocols surrounding the polling of ADB devices were more explicitly defined. Clarifying the rules surrounding the polling process revealed the fact that certain developers had made false assumptions. This especially affected developers using an ADB hardware lock for copy protection. As it turns out there was really only one third-party vendor affected by this change. However the impact was magnified because this one developer sold their lock to a number of third-party software developers who include the ADB lock as a standard part of their application. Once the problem was diagnosed, Apple worked with the developer of the ADB lock on a solution.

6) 25Mhz Clock Speed - "Too fast"

Certain applications were designed around the assumption that a call to a particular chip or location in memory would be returned within a given interval of time. Those developers who made this assumption ensured that their product would break when Apple introduced a higher clock speed system. The Macintosh IIci turned out to be that higher speed system. This change affected only a small number of developers who had instituted timing-dependent copy protection schemes and developers who designed timing-dependent games.

7) Gamma correction

Since its introduction, all Macintosh II systems perform color correction, commonly called "gamma correction", on video displays to compensate for non-linearity in the monitor's phosphor response. The effect of a proper gamma table is to make a monitor appear brighter and colors more vivid. Theoretically each brand of monitor has its own unique phosphor composition and therefore each monitor should have its own "device specific" gamma table.

The fact is that most third-party vendors do not provide a gamma correction table data with their monitor, so machines released prior to the Macintosh IIci set all displays to the gamma correction designed for the Macintosh Hi-Res RGB Display. While this was not really correct, it nonetheless ensured that all displays had at least some form of gamma correction.

In order to encourage third parties to offer their own gamma correction information, the new video card architecture (incorporated into the Macintosh IIci ROM) supports improved methods of carrying this device-specific data with each card. As a result of this change the Macintosh IIci scans for gamma table data in each video card and sets each card with its own customized gamma tables. In many cases, third-party cards do not properly initialize their own hardware, expecting to be set with the Hi-Res RGB gamma table. As a result, displays connected to these cards are left uncorrected, which means that they tend to look significantly darker when connected to the Macintosh IIci.

As an aid to improving the appearance of old cards on the Macintosh IIci, Developer Technical Support made available source code to an INIT that allowed developers to load the appropriate gamma table information.

8) Problems related to bugs in the Macintosh IIci ROM

In addition to those problems that we were aware of, there were a number of unanticipated problems that were discovered in the Macintosh IIci ROM. These changes have been corrected through bug fixes incorporated into the 6.0.5 release of system software.

- Palette Manager

There was a patch file for the Palette Manager which failed to be included in the final Macintosh IIci ROM. This patch file helps to correct a minor problem in the 32-bit color QuickDraw code built into the Macintosh IIci ROM, which determines the color palette for an application when it is opened. By not including this patch, certain paint and image processing applications ended up displaying colors incorrectly.

- Zero-width Characters

This is a bug which was inadvertently introduced in the Macintosh IIci ROM. It causes zero-width characters to not be drawn. Zero-width characters include characters used for musical notation, foreign languages

(i.e. Kanji and Arabic) and mathematical notation. This caused particular problems for developers doing musical typesetting and some mathematics programs.

- Serial Driver

Due to an anomaly in the serial driver code, when a Macintosh IIci is being used with a modem and a break character is returned during a communications session, the system will crash or hang. This does not occur frequently, but does occasionally occur when a user is engaged in a session with one of the remote information services.

- TextEdit

There were a handful of bugs in TextEdit which were incorporated in the Macintosh IIci ROM. The majority of these problems are cosmetic and do not cause the system to fail. TextEdit is used by a number of applications including AppleLink and HyperCard. In addition, TextEdit is used in all dialog boxes that appear on your screen.

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