# Differentiating Between ROM01 and ROM03 Apple IIGS Motherboards
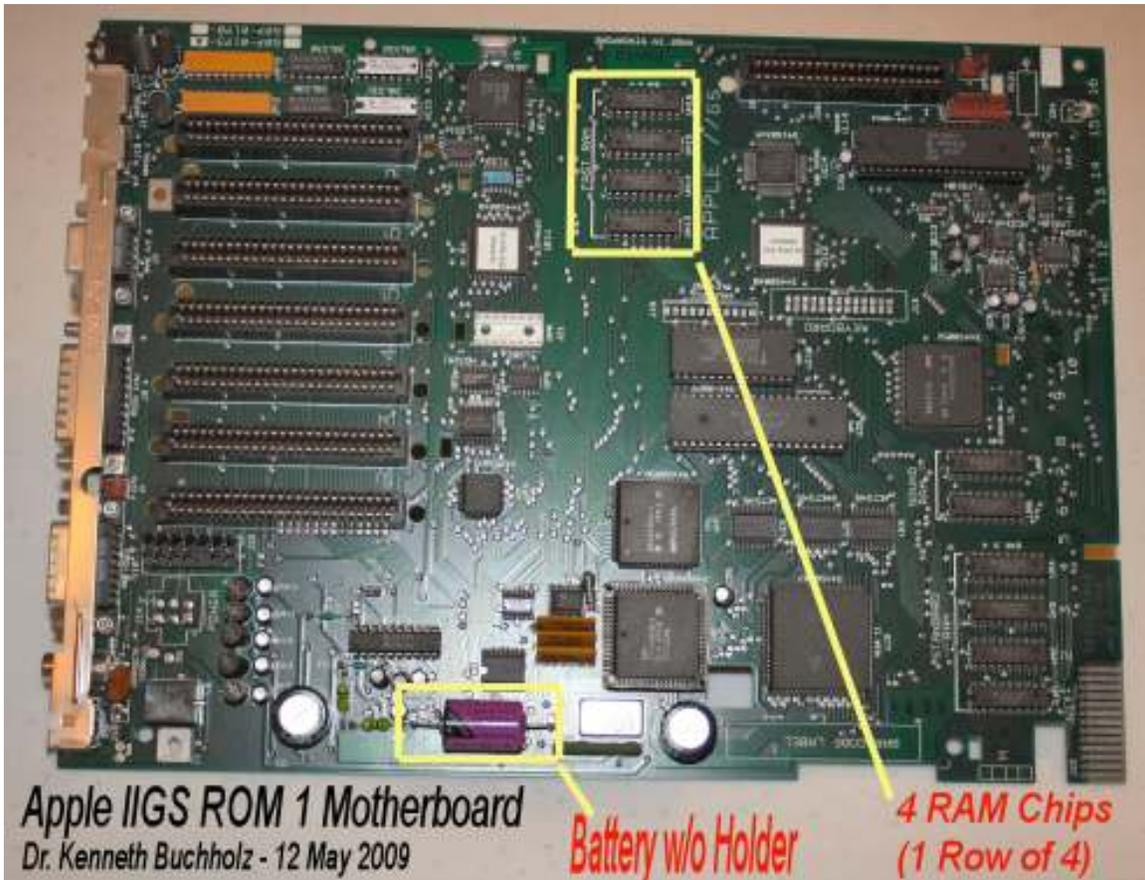## By Dr. Kenneth Buchholz

The Apple IIGS ROM03 systems have several key changes from the previous ROM01 systems:

- 1 MB RAM built into the motherboard, whereas the ROM01 had only 256K RAM built into the motherboard;
- The ROM03 ROM size was doubled, the ROM chip is larger & contained System 5.x Toolsets which ROM01 does not;
- The ROM03 system was 10% faster than ROM01 systems;
- The motherboard layout of ROM03 was changed;
- The clock battery was now user-serviceable as it was placed in a removeable socket rather than being soldered directly to the motherboard;
- A jumper location was added to lock-out the Control Panel (useful in schools and homes with young children – prevented them from mucking up the works); and
- "In addition to several bug fixes, more programmer assistance commands and features, a cleaned up Control Panel with improved mouse control, RAM Disk functionality, more flexible Appletalk support and slot mapping were added" to ROM03 (Wikipedia).

It is quite easy to determine if the motherboard is ROM01 or ROM03 just by looking at them. Below are photos of a ROM01 motherboard and a ROM03 motherboard, removed from the computer.

- Notice that the battery on the ROM01 motherboard is soldered directly to the motherboard (you can tell that because there is no black battery holder) and is located directly under the power supply unit very close to the edge of the board. Thus, if you're looking at a photo where the top cover of the system has been removed, you will not be able to see the battery as it will be hidden by the power supply. If you look at the second photo, that of a ROM03 motherboard, you will see the battery is in a black holder and that it is located closer to slot 1. As such, it will be visible when the power supply unit is in place.

- Notice the locations and number of RAM chips. In the ROM01 motherboard, there is a single row of 4 RAM chips located near the right edge of the motherboard. In the ROM03 motherboard, there are two rows of 4 RAM chips (8 total) and they are located closer to the center of the motherboard; that is, there are several components between the RAM chips and the right edge of the motherboard. Even when the system has an Extended Memory Card installed, these RAM chips are visible. Looking at photos where the computer's top cover has been remove, you can instantly tell if the system is ROM01 or ROM03 simply by looking at these RAM chips. 1 row of 4 = ROM01, two rows of 4 = ROM03. It's that simple!

# Apple IIGS ROM01 Motherboard Exposed



Apple IIGS ROM 1 Motherboard
Dr. Kenneth Buchholz - 12 May 2009

Battery w/o Holder

4 RAM Chips
(1 Row of 4)

# Apple IIGS ROM01 Motherboard Exposed



Apple IIGS ROM 3 Motherboard
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Battery in Holder

8 RAM Chips
(2 Rows of 4)