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Macintosh Plus, SE: Modifying Screen Refresh Rate For NTSC Video

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TOPIC -----

Some Macintosh users have wondered about shooting a television picture of the screen of a Macintosh SE or Macintosh Plus: Why does video-camera footage of the Macintosh result in a rolling bar across the image of the computer screen? Can anything be done to solve the problem? And if so, will the Macintosh run correctly after that?

DISCUSSION -----

The "rolling bar" results from the Macintosh SE or Macintosh Plus computer's refresh rate (vertical scan rate) of 60.15 Hz, when television's refresh (vertical scan) rate is 59.94 Hz.

You can use an external or internal clock at 15.612515 MHz (.35% of the Macintosh's internal clock) to stabilize the scan line that rolls down the screen. There are three problems with this:

- Such adjustments void the computer's warranty.
- Ordering a specific oscillator usually takes anywhere from 8 to 12 weeks.
- Once stabilized, the visible scan line will remain visible on the screen.

You might be able to start it within the retrace period (where it rolls off bottom and begins on the top), but the odds are against it.

After the adjustments discussed above, the Macintosh would not be running correctly -- at least in a technical sense. The screen refresh rate would be incorrect, and other Macintosh components dependent on the internal clock would be slowed down accordingly. There are many possible problems, but applications would probably continue to function without anyone noticing any real problems for some time.

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