Tech Info Library

Macintosh Quadra 840AV: Horizontal Line in Captured Video (3/94)

Article Created: 10 March 1994

TOPIC --

When displaying live video from a video camera, or in a captured frame or
movie on a Quadra 840AV there appears to be a horizontal line going through
the image. It is more noticeable on curves or diagonal lines in the image.

The line stays in the same position so it doesn't appear to be a sync
problem. I don't seem to get the same problem when capturing from a VCR. Is
this a known issue?

DISCUSSION --

What you are seeing is a scaling artifact, and is normal in some
situations. It may be seen whenever an image is scaled vertically; but it
should be most noticeable when the image is scaled vertically so that it is
smaller than full size and greater that half.

The scaler works by low-pass filtering and subsampling. In the vertical
dimension, this means that some of the horizontal scan lines are dropped,
but the data contained in the dropped lines is averaged into the remaining
lines. This averaging minimizes the dropped line effect, but it is not
perfect; it is an approximation of perfect (you may see perfectly scaled
images on television, but the equipment that does this costs thousands more
than the entire computer).

In the case where an image is scaled vertically by less than full but
greater than half, the image displayed on the screen consists of two video
fields interlaced onto the monitor. The video scaling processes fields and
it takes two fields to make a frame. When a line is dropped in one field,
the corresponding line in the opposite field is also dropped. When the two
fields are reconstructed on the display, the effect is that two vertically
adjacent lines are dropped, and this can be visible in some cases.

The most likely reason it is not as visible when using a VCR is that the
image from a VCR is lower resolution from the filtering done in the
recording process. The artifact is still there, but the lower resolution
hides it.

Keywords: <None>

==

This information is from the Apple Technical Information Library.

19960215 11:05:19.00

Tech Info Library Article Number: 14850