NTSC Video: How To Avoid Flicker on Macintosh

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TOPIC ----------

This article discusses how to overcome Macintosh video "flickering" in an NTSC environment. (NTSC is the current broadcast standard for television signals.)

DISCUSSION ----------

Macintosh video in an NTSC environment is commonly beset by flickering images.

The flicker is most noticeable when 1-pixel horizontal lines are used in the display. Due to the technique used for NTSC displays, 1-pixel lines are actually on the screen only half of the time. NTSC video is displayed at 30 frames per second, with each frame having 2 fields, or 60 fields per second. A field consists of alternating lines of the frame: odd lines are displayed in the first field, even lines in the second field.

Most video images contain material that exists in each field (each half of the frame). This allows these portions of the image to remain on screen at all times, persisting through both fields. A 1-pixel line exists on the screen only in alternating fields -- half of the time.

This is the nature of NTSC and is not specific to the Macintosh -- ANY computer graphics only 1 pixel wide have a tendency to flicker. There are various methods for resolving this annoyance.

Several companies have converters that capture both fields and display them at the same time. A similar technique is beginning to appear in consumer television receivers, generally labeled "extended definition TV", or EDTV: with both fields displayed, the 1-pixel lines are always on the screen. Information on such professional-level devices can be found in ads in computer graphics magazines.

Mass Microsystems ColorSpace F/X NuBus card for the Macintosh II family uses a similar approach to provide stable 1-pixel lines on an NTSC video device.

Another approach, used by many computer graphic artists, is to simply use 2-pixel lines for any subject being sent to the NTSC environment.

In some situations, like trainings and demos, the only noticeable flicker is in

a Macintosh window's title bar. The software approach for avoiding the annoying title bar flicker is to use an INIT called "NeVR". This INIT makes the title bar a solid pattern rather than the normal 1-pixel horizontal lines.

NeVR is available on many of the public access networks and bulletin boards.

For more information, search under: "Mass Micro"

Keywords: <None>

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