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Subject: Re: ANTI-ALIASING? WHAT?

Posted by [Med Bennett](#) on Mon, 05 Feb 2001 04:15:30 GMT

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Wow, here's a can of worms! Are you hungry, folks? I'll take a stab at no. 2, though I am by no means the expert. That would be a Mr. David Fanning.

Colors on a monitor can be represented by a variable number of bits per pixel (picture element, or dot on the screen). Eight bits (one byte) per pixel is typical of older computer graphics systems, and certain graphics file formats. With eight bits, you can specify 256 colors, or shades of gray. Eight bits is fine for realistic grayscale images, but is inadequate for representing the full range of colors. Therefore, eight bit color images employ a color palette, where each of the 256 colors is assigned a specific RGB triplet, or color. This is the scheme employed in GIF files. Colors in GIF files are quantized, meaning that the computer figures out which 256 colors will give the best approximation to the original image, and the palette is stored along with the actual image information. The original colors in the image are "rounded" to fit into these 256 possible colors.

The human eye can of course recognize far more than 256 colors. To more accurately represent the real world color spectrum, 8 bits per color is used. This is 24-bit or true color, where there are 8 bits each for red, green and blue, for a total of  $256^3 = 16,777,216$  colors. JPEG and some types of TIFF files use 24-bit color. CYMK is a 32 bit system, using 8 bits each for cyan, yellow, magenta, and black. This is better suited for printing applications.

Mark Chan wrote:

- > There is a group of graphical terms that I don't have a clue what they mean
  - > or when to/not to use them. Here is a partial list of them:
  - >
  - > 1) anit-alising vs imagemap
  - > 2) 8 bits, 24 bit, RGB (24 bit), paletted (8 bit), CMYK (32 bit), 16 color,
  - > grayscale (8 bit)
  - > 3) postscript level 1,2,3
  - >
  - > I know they are related/interlinked. When should one use one and not the
  - > other? Which best to use when? What is most appropriate for exporting? For
  - > importing? What is most preferred for IDL applications? What does it do to
  - > the image if you open one with the wrong settings? If you output one with
  - > the wrong setting, then what?
  - >
  - > any help in clarifying them is greatly appreciated.
  - >
  - > Thanks in advance,
  - > Mark
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