Video Definitions: NTSC, PAL, SECAM (8/93)

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TOPIC ---

There are currently three standards in the world for composite, color encoded video: NTSC, PAL and SECAM. Standards exist for High Definition Television (HDTV), however, this article will only discuss the broadcast formats currently in wide use.

DISCUSSION ---

NTSC

NTSC stands for the National Television System Committee of the Electronics Industries Association, the organization which defined the standard format adopted by the FCC for broadcast television in the United States. NTSC is also the standard used in Japan, Canada, and Mexico.

"NTSC" is usually taken to mean the NTSC color television system itself, or its interconnection standards. This is also called "composite video" because all of the video information—sync, luminance, and color—are combined into a single analog signal.

"NTSC" is often said to stand for "Never The Same Color." When color broadcasting first became a commercial possibility, the standard was created to allow color television signals to be compatible with existing black and white television. The restriction of compatibility with the earlier technology results in compromises in color image quality.

PAL

"PAL" stands for Phase Alternation by Line, the broadcast video standard used in West Germany, Great Britain and most Western European nations.

By reversing the relative phase of the color signal components on alternate scanning lines, this system avoids the color distortion that appears in NTSC. Otherwise, PAL closely resembles NTSC. Based on the 50 Hz power system, PAL displays 625 lines interlaced at 50 fields per second (25 frames per second).

PAL is not compatible with NTSC or SECAM, though conversion between the

standards is possible. Video products to be used in Europe require
compatibility with PAL standards.

SECAM

"SECAM" is an abbreviation for Séquential Couleur à Mémoire, the line
sequential color system used in France, Russia, Eastern Europe and some
Middle Eastern countries.

Like PAL, SECAM is based on a 50 Hz power system, displaying interlaced
lines at 50 fields per second. The color information is transmitted
sequentially (R-Y followed by B-Y, etc.) for each line and conveyed by a
frequency modulated subcarrier that avoids the distortion arising during
NTSC transmission.

SECAM is not compatible with NTSC or PAL, although conversion between the
standards is possible.

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