La Vidéo composite

- Le signal **vidéo composite** est le signal de base de la vidéo couleur analogique. Il trouve son origine dans le signal vidéo noir et blanc existant, et la double compatibilité qu'il a fallu introduire avec l'apparition de la télévision en couleurs :
- compatibilité du signal couleur avec les récepteurs noir et blanc
- compatibilité du signal noir et blanc avec les récepteurs couleur
- Ainsi, le signal **vidéo composite** mélange les informations liées à la couleur et celles liées à la luminance de l'image, pour chaque point à afficher à l'écran.
- Historiquement, trois systèmes de codage de **vidéo composite** ont vu le jour :
- le NTSC, essentiellement aux États-Unis et au Japon
- le SECAM, en France, dans les pays de l'Europe de l'Est, et en Afrique
- le PAL, en Europe
- Du fait du mélange des informations de luminance et de chrominance, le signal **vidéo composite** souffre d'effets indésirables de moirage. L'Y/C (luminance/Chrominance) résout ce problème. Dans le signal Ycbr, on trouve le signal Y de luminance et deux autres signaux de différence de chrominance: R-Y et B-Y). C'est un signal vidéo dont la luminance est séparée de la chrominance à la fois *physiquement*, dans le câble qui véhicule le signal, sur deux fils différents, et *logiquement* dans l'interprétation des données utilisées pour transporter ou coder l'information (et la bande passante attribuée à chaque signal).
- La **vidéo composite** est utilisée dans :
- les téléviseurs, sur le connecteur Péritel
  (et quelquefois une prise RCA en façade)
- les magnétoscopes, sur le connecteur Péritel (et une prise RCA)
- les caméscopes, sur des prises RCA
- les laserdisc, sur des prises RCA
- les appareils photo numériques, sur le connecteur *Jack*

Composite video

Composite video is the format of an television (picture only) signal before it is combined with a sound signal and onto an .

Composite video is often designated by the **CVBS** acronym, meaning any of " , , and ", "Composite Video Baseband Signal", "Composite Video Burst Signal", or "Composite Video with Burst and Sync".

It is usually in a standard format such as , , or . It is a composite of three source signals called Y, U and V (together referred to as) with sync pulses. Y represents the brightness or of the picture and includes synchronizing pulses, so that by itself it could be displayed as a monochrome picture. U and V represent hue and saturation or , between them they carry the color information. They are first mixed with two orthogonal phases of a color carrier signal to form a signal called the . Y and UV are then combined. Since Y is a signal and UV has been mixed with a carrier, this addition is equivalent to -division multiplexing.

Composite video can easily be directed to any broadcast channel simply by modulating the proper RF carrier frequency with it. Most analog home video equipment records a signal in (roughly) composite format: store a true composite signal, while tapes use a slightly modified composite signal. These devices then give the user the option of outputting the raw signal, or modulating it on to a or frequency to appear on a selected TV channel. In typical home applications, the composite video signal is typically connected using an jack, normally yellow (often accompanied with red and white for right and left audio channels respectively). connectors and higher quality co-axial cable are often used in more professional applications.

In Europe, connections are often used instead of RCA jacks (and to a lesser extent, -Video), so where available, RGB is used instead of composite video with computers, video game consoles, and players.

Some devices that connect to a TV, such as VCRs, older game consoles and computers of the 1980s, naturally output a composite signal. This may then be converted to RF with an external box known as an modulator that generates the proper carrier (often for channel 3 or 4 in America, channel 36 in). Sometimes this modulator was built into the product (such as video game consoles, VCRs, or the Atari, Commodore, or TRS-80 CoCo home-computers) and sometimes it was an external unit powered by the computer (in the case of the TI-99 or some Apple modulators) or with an independent power supply. In the USA, using an external RF modulator frees the manufacturer from obtaining FCC approval for each variation of a device. Through the early-1980s, electronics that output a television channel signal were required to meet the same shielding requirements as broadcast television equipment, thus forcing manufactures such as Apple to omit an RF modulator, and Texas Instruments to have their RF modulator as an external unit, which they had certified by the FCC without mentioning they were planning to sell it with a computer. In Europe, while most countries used the same broadcast standard, there were different modulation standards (PAL-G versus PAL-I, for example), and using an external modulator allowed manufactures to make a single product and easily sell it to different countries by changing the modulator.

The argument has been made that the point of removing the RF modulator to an external box was to prevent RF interference with the home computers, but as the modulator ran in the range of >50MHz in all countries, and the computers ran in the range of 1-4MHz, any interference is debatable, and on

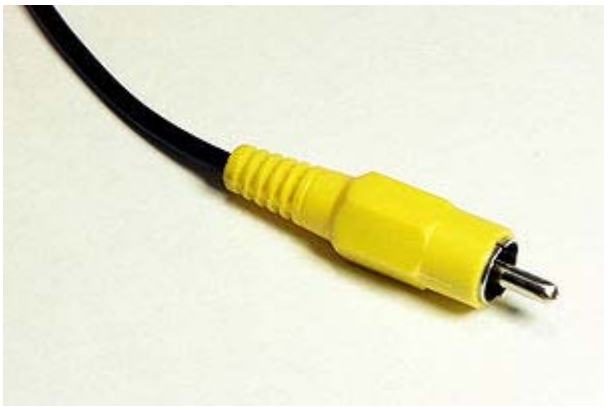
a 5V TTL logic computer, it is hard for the weak output of an RF modulator to cause interference. Since the RF modulator was sealed inside a metal can (though more to protect it from the computer noise), there was little RF to interfere with the computer. Finally, the same interference would propagate down the composite video cable or the power lead cable into the computer in any case.

The process of modulating RF with the original video signal, and then demodulating the original signal again in the TV, introduces several losses. RF is also "noisy" because of all of the video and radio signals already being broadcast, so this conversion also typically adds noise or interference to the signal as well. For these reasons, it is typically best to use composite connections instead of RF connections if possible. Almost all modern video equipment has at least composite connectors, so this typically isn't a problem; however, older video equipment and some very low-end modern televisions have only RF input (essentially the antenna jack); while RF modulators are no longer common, they are still widely available to translate baseband signals for older equipment.

However, just as the modulation and demodulation of RF loses quality, the mixing of the various signals into the original composite signal does the same, causing a checkerboard video artifact known as crawl. Dot crawl is an infamous defect that results from crosstalk due to the intermodulation of the chrominance and luminance components of the signal. This is usually seen when chrominance is transmitted with a high bandwidth, and its spectrum reaches into the band of the luminance frequencies. This has led to a proliferation of systems such as -Video and video to maintain the signals separately. filters are also commonly used to separate signals, and eliminate artifacts, from composite sources.

When used for connecting a video source to a video display where both support 4:3 and 16:9 display formats, the PAL television standard provides for signalling pulses that will automatically switch the display from one format to the other. The Composite video connection supports this operation. However the NTSC television standard has no such provision, and thus the display must be manually switched.

Composite video



On consumer products a yellow connector is typically used for composite video.

Analog video connector

Type

Specifications

Hot pluggable	yes

External	yes
Video signal	NTSC, PAL or SECAM video
Pins	1 plus screen
Connector	connector, 8th inch plug, etc.

Pin out	
Pin 1	video