

Understanding Video Signals And Cables

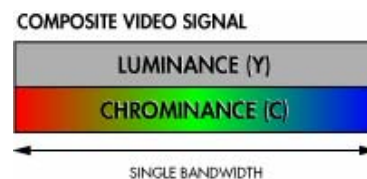


Vision products now form an integral part of the Home Entertainment system. The introduction of superior and exciting new technology has seen a whole new vocabulary develop and many find it daunting to say the least. Even we have had to work hard to get our heads around the technical stuff! One area that has caused a few headaches for many is the different types of video connections. Once upon a time there was only one – the antenna connection. Even the VCR connected through the antenna or RF input! It was only about ten years ago that televisions started coming out with a composite (yellow) input in addition to the old and poor quality RF connection. This allowed for better VCR picture and the connection of a Laser Disc Player – the forerunner to the DVD Player.

The main purpose of this article is to give our customers a general idea on the background and development of the different forms of video connections available today. It is not intended to discuss every aspect or go too deeply into the technical aspect.

Composite Video Signals

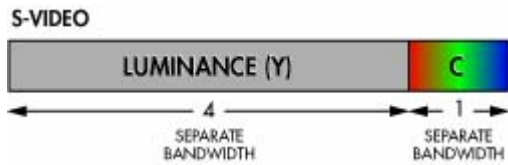
A composite video signal contains both Luminance (Y) or brightness and Chrominance (C) or colour signals with the same bandwidth. It is usually made up with RCA type plugs on either end of a length of shielded cable, but sometimes can have a BNC type plug.



Approximate Horizontal Line Resolution (HLR) is 300 lines.

S-Video Signals

S-video, that small multi-pin plug offering even better picture quality than composite video soon followed. S-Video processes the Luminance (Y) and Chrominance (C) signals into separate bandwidths in a 4:2 ratio. Video information on a DVD is stored in a 4:2 ratio.

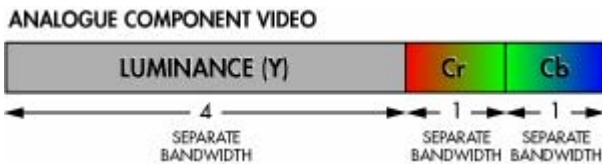


Approximate Horizontal Line Resolution (HLR) is 400 lines.

Component Video Signals

This is one of the relatively new buzz words in the audio-video industry. Component video cables are a 3-cable connection purely to improve picture quality even further. How does it work?

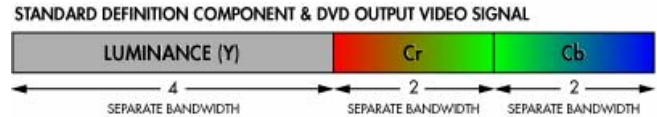
This 3-cable connection allows the Luminance (Y) and Chrominance (C) portions of a video signal to be processed separately. S-video works similarly, but component video improves colour accuracy further by splitting the Chrominance (C) signal into two separate portions.



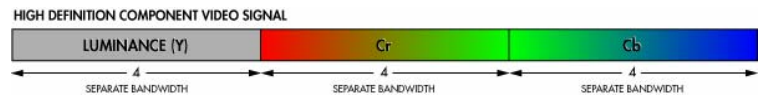
Approximate Horizontal Line Resolution (HLR) is 425 lines.

Component video connections are found on most DVD players and HDTV tuners, and on a growing number of TVs and A/V receivers. However, this type of connection can vary in bandwidth from unit to unit. To pass progressive-scan DVD signals without noticeable softening of the picture, a Component Video connection should have bandwidth of 12 MHz or higher; passing HDTV signals without softening requires bandwidth of 30MHz or higher, so normal RCA audio leads even of reasonable quality probably won't do. However, if you are only slightly shy of the required bandwidth for the signal you're viewing and your TV is 86cm or

less, the picture softening may be extremely subtle, or even unnoticeable. Finally, it must be remembered that there are three Component Video formats – Analogue with 425 lines (HLR); Standard Definition and DVD output with 500 lines (HLR) and High Definition with 700 lines (HLR).



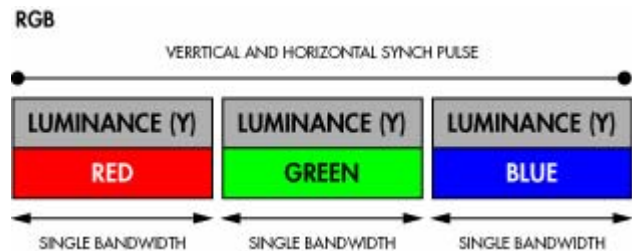
Approximate Horizontal Line Resolution (HLR) is 500 lines.



Approximate Horizontal Line Resolution (HLR) is 700 lines.

RGB Video Signals

Component output, should not to be confused with RGB output, which also uses three connections but is entirely different in operation. RGB has equal portions of Chrominance (C) and Luminance (Y) divided up into three separate bandwidths. Which is better? It depends on the type of signal (Interlaced or Progressive) and the type of display device (CRT or Projector).



Cables

Which ones should you choose and do you need them? Again, not an easy question to answer, but as always common-sense should prevail. In our

honest opinion, Matthew Bond, a co-founder of Tara Labs and an Australian from way-back, manufactures one of the best value-for-money ranges of cable in the world and yet his entry-point Video Cable, the P103V sells for \$149 for a 1 metre set, while a 2 metre set is \$199. As a matter of interest the next level up, the P203V cost \$199 and \$249 respectfully. Lengths up to 10 metres are readily available, others by special order. These are suitable for both Component Video Signals and RGB Signals.

We usually recommend that customers spend between 10% and 15% of their total system value on cables. Therefore, it would be a bit unrealistic and unnecessary to invest this sort of money on a sub \$500 DVD Player! Clearly, Component Video connections are designed for the videophile that has the best in equipment at both ends of his system, including a very large-screen TV or high quality home cinema projector. If you think your system is up there with the best, then you've probably already invested in quality Component Video Cable. If you haven't, then isn't it time you did?

Testimonial.

Below is a recent email we received from a happy customer:

I want to thank you and your staff for proving to me the importance of good cabling. I have been using 'basic' RCA plugs between my \$2,000 Onkyo Amp and \$10,000 projector with some nagging problems - mainly some 'flickering' while watching 16:9 DVDs. You suggested upgrading to a \$300, 10 metre Tara Labs S-Video cable. My reaction? '\$300 for a cable is a bit rich'.

I still took your advice and purchased my 'High end' cable and ... HAVE NEVER BEEN HAPPIER!!! I now watch perfect 16:9 DVDs with absolutely no flickering, or for that matter, no problems at all.

My advice to all and sundry: A High End amp, or DVD, or projector is rendered completely useless unless you are prepared to use High End cable.

Once again thank you for your advice. It has been invaluable.

AD

Vermont, Victoria

We would like to acknowledge the input from Mr. Steve Ismay, Australian product manager for Denon in Australia. Without his excellent assistance, this article would not have been possible.

E & O E

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