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VIDEO

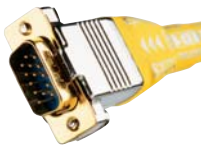
Composite video Composite-video signals, so called because they carry both chrominance (color) and luminance (black-and-white) information along a single wire, use the same familiar RCA jack and plug as line-level analog and coaxial digital audio. Usually the jacks (and cables) are color-coded yellow. Any coaxial cable with RCA plugs can do an adequate job of transmitting composite video, but specialized video cables optimized for 75-ohm connections will yield superior images, especially over long runs, because they minimize impedance mismatches and signal reflections that can cause ghosting. Since composite video is the lowest-fidelity video signal format generally available, use S-video or component-video connections where quality matters.

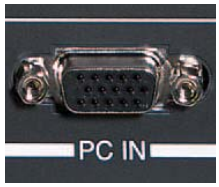
S-video Because S-video uses separate wires for the chrominance and luminance segments of a color video signal, it can deliver noticeably better picture quality than the composite-video format, which crams everything into one wire. S-video employs a small four-pin plug (officially known as a mini-DIN connector) that you're unlikely to encounter anywhere else. Be careful to orient S-video plugs correctly before inserting them: impatiently forcing one in the wrong way can easily bend the tiny pins, effectively ruining the cable. Don't ask how I know this.

Component video Component-video cables carry signals that are broken down to three fundamental "components." Since these are carried on three individual wires, they can convey even better image quality than S-video. Component-video cables are all terminated with familiar RCA jacks and may be bundled together, but they're still electrically separate. The three component signals — luminance (Y) and color-difference signals derived by subtracting the luminance signal from two of the three primary colors (blue and red) — are labeled Y, P_b, and P_r, with the corresponding jacks and plugs usually color-coded green, blue, and red, respectively. You can't really hurt anything if you get the wires and jacks crossed up, but you'll get results ranging from no picture at all to weird, unnatural-looking colors. Some DVD players use BNC jacks for their component-video outputs (see **RGB+H/V** just below).

You might see component-video inputs and outputs described as "wideband," "HDTV-ready," "HDTV-capable," and so on. These terms mean that signals from HDTV tuners, progressive-scan DVD players, line doublers, and other video processors can be handled with no problem and will display properly when they reach your high-definition TV or monitor. If high-def or progressive-scan signals go through a component connection that's *not* wideband-capable at any point along the way to your TV, there's a good chance that you *will* get a picture, but it will be very soft and lacking in high-definition detail.

RGB+H/V The term RGB+H/V stands for red-green-blue plus horizontal and vertical sync signals. This is a long-standing pro-video/computer-monitor format that's carried on into the HDTV era. You'll find this five-jack input set on HDTV monitors and video projectors (including some non-high-def videophile models). Most commonly, RGB+H/V inputs and outputs employ BNC connectors (shown above), a professional-grade, bayonet-type plug and jack widely used on lab equipment that locks in place for an ultratight connection. Occasionally RCA connectors are used instead. You can get adapter cables with a VGA plug at one end and RGB+H/V plugs at the other from computer and pro-video sources, but they tend to be expensive. (For the insatiably curious: BNC stands for Bayonet Neill–Concelman, after the men who invented the connector.)





VGA The VGA-graphics-standard 15-pin D-Sub connector is familiar to anyone who's ever hooked up a monitor to a PC. In effect, VGA provides the same connections as RGB+H/V in a different physical configuration. VGA is found as a video output option on some HDTV tuners and as an input on some HDTV monitors and projectors.

DVI Like VGA and RGB+H/V, the DVI (Digital Visual Interface) connection is an immigrant from the computer world. It supplies a one-way path for digital video signals from source to display via a rectangular, 18-pin connector — for example, from an HDTV tuner to an HDTV monitor. Because a DVI connection eliminates the digital-to-analog conversion that's required when a digital source has to pass through analog video connections (even wideband component video, RGB+H/V, and VGA are still analog), it holds the potential for improved picture quality from "digital," fixed-pixel plasma, LCD, and DLP (Digital Light Processing) displays. DVI connections are found on many of the newest HDTV components, which incorporate a copy-protection scheme called HDCP (High-bandwidth Digital Content Protection) that prevents DVI signals from being copied.