

# Cables for Home Theater System Installation

By Vic Metten – July 2008

## How to connect HDTV to other equipment such as AV receivers and DVD players

Almost all new HDTVs found in today's market have multiple connections on the back of each unit. These are some of the connections you might find

**Analog coaxial RF Connection:** This is a "legacy" connection found on older TVs. It is the poorest quality TV connection. This connection transports both an audio and a video signal in a purely analog format.

**Composite Video:** This is the yellow jack located on the back of a TV, it passes Analog video only. This single cable has both Chrominance and Luminance portions of a video signal and can pass up to 480 interlaced lines of resolution.

**S-Video:** This is a small 4-pin jack that is located on the rear of a television. It is an upgrade in terms of image quality on a television because S-Video separates the Chrominance and Luminance portions of a video signal, which increases the quality of a video image. S-Video is a connection that sends an analog signal with resolution of up to 480 interlaced lines of resolution.

**Component Video:** The red, blue, and green RCA jacks on the back of a TV make up this connection. The RGB signal does not include Audio, and it is an Analog video signal. The Luminance and 2 colors are separated in this connection by component video, which results in true High Definition image quality. Component Video connections allow 1080 progressive lines of resolution (1080p/FullHD) to be passed.

**DVI:** Digital Video Interface has a true digital video connection, but has no audio. This type of connection was the Hi-Def standard until recently and provides up to 1080 progressive lines of resolution.

**HDMI High Definition Multimedia Interface (HDMI):** This connection allows a single cable connection between the auxiliary equipment and HDTV. It is a fully digital Audio and Video connection. Almost all new HDTV's have this connection.

Some connection scenarios:

### HDTV to Blu-Ray DVD player.

A single HDMI cable is all that is needed to connect these devices. This will maximize the quality of sound and video passing between the Blu-ray and the HDTV.

### HDTV, Blu-ray DVD player, and a full surround sound system.

The best way to connect these three devices, provided the surround sound AV Receiver has HDMI input/output capability, is to use a short HDMI cable from the Blu-ray to the AV Receiver and run a longer HDMI cable from the AV Receiver's output to the HDTV. This allows the receiver to switch the HDMI connections and is especially useful if the new HDTV only has one HDMI jack and there are multiple pieces of equipment with HDMI jacks that you want to connect. It will also make it possible for the AV Receiver to use the digital Audio track from the Blu-ray player.

### DVD player with an older HDTV and a surround sound system.

If the HDTV's best connection is a DVI connection and the DVD player has HDMI, a simple conversion cable or adaptor can help to convey the digital Video signal to the HDTV. To pass the digital Audio portion of the signal from the DVD player to the AV Receiver, use either a Coaxial Digital (the orange jack on an AV Receiver) or a Toslink Optical (the small square jack that says "optical").

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