

Understanding the Differences Between HDMI, Optical, Coaxial & RCA Cables

Whether you're looking to upgrade your home theater, television system or are perhaps putting together your first surround sound setup. You've probably spent more than a few moments looking through the options for audio, video and speaker cables. In this short 101 course we'll break down each speaker cable type and let you know which one is likely your best bet. You spent hours researching the perfect audio receiver that will be the workhorse for your new home theater. Then just as you get ready for checkout the salesperson mentions that you'll probably need some cables. In a mad panic you may just go with their suggestion, or you maybe just grab the most familiar thing. But was this the right decision? Did the hurried and informed choice compromise the quality of playback of your new system?

For audio connections between audio receivers to popular components such as a DVR, Blu-ray player, or any modern day game console, there are just a handful of connection types available.

1. HDMI: (Recommended)

HDMI cables are an all-in-one solution designed to transfer both audio and video. The HDMI cable is also the most advanced as its able to deliver uncompressed audio to 8 channels for a full 7.1 speaker experience (in popular Dolby TrueHD and DTS HD formats likely used by a Blu-Ray disk). The HDMI Cable also can handle 3D and 4K content, making it a future-proof choice when piecing together your home theater.

2. Optical / Toslink:

As HDMI cables have become cheaper and more prominent, optical cables have started becoming a less common choice. Optical cables work by transmitting light pulses through a hollow channel in the middle of the wire. This makes the cable a great solution with minimal signal degradation, but it is also limited to transferring only up to 5.1 surround sound.

3. Digital Coaxial:

Digital coaxial cables are very common and can deliver 5.1 surround sound audio, just as a Optical or Toslink cable. They are typically used to connect a subwoofer to an audio receiver, and the difference in sound quality between a digital coaxial and an optical cable are nearly indistinguishable.

4. Analog Coaxial:

These are the cables your parent's likely used. They're analog, but are able to provide surround sound with multiple connections. Given that they were originally designed to transfer analog sound, they can degrade the sound quality of digital recordings. For that reason, you'll likely move past these cables and onto one of the options listed above.

A typical home theater in a box surround sound will involve you connecting your speakers to a receiver with the included speaker wire. You'll then likely use a Digital Coax to connect the subwoofer to the receiver as well. An HDMI cable would then be preferred when connecting your receiver to your HDTV or projector.

Note: When purchasing speaker cables don't feel the need to go for high-end, name brands such as Monster.