

## Lesson 7. Cables


 Cable Matters

 A Guide to:  
**Audio Cable Types**


### S/PDIF Optical

S/PDIF, or Sony/Phillips Digital Interface cables, are commonly found on mainstream consumer A/V systems, some set top boxes, games consoles, and TVs. These optical cables carry digital audio data over a beam of light, enabling extra long cables.



### S/PDIF RCA

S/PDIF RCA cables carry the same data as optical cables, but they use a traditional copper cable and a standard RCA connector. As the cable doesn't use a beam of light, these digital audio cables have to be short.



### TS

TS cables – short for Tip / Sleeve – are unbalanced audio cables with two conductors – one for audio and one for ground. They are always unbalanced, and are used for mono audio equipment like guitars and musical instruments.



### TRS

TRS cables – short for Tip / Ring / Sleeve – have 3 conductors. These cables can either be balanced when carrying mono audio signals, or unbalanced when carrying stereo audio signals. You'll find TRS cables on headphones, speakers, and mixers, audio interfaces, and studio monitors.



### XLR

XLR cables are always balanced, and utilize a large, bulky 3-pin connector. XLR cables are a popular choice for microphones and professional audio gear, owing to their balance and durability.



### SpeakON

SpeakON cables are typically used in high-end professional speakers and amplifiers. SpeakON cables use a large locking connector, making this cable choice ideal for durability. SpeakON cables are unbalanced.



### Banana plugs

Banana plug cables are used to carry audio signals from home theater systems to powered speakers and subwoofers. These cables are always unbalanced, and typically carry a single channel of audio to a single speaker. They are popular with 5.1 and 7.1 channel surround sound systems.



### MIDI

MIDI do not technically carry audio, but rather digital event messages between instruments and computer systems. They are used to connect instruments to computer digital audio workstations (DAWs) and computerized effects systems.



### RCA

RCA cables are unbalanced analog audio cables that carry audio between televisions and home theater equipment. Stereo RCA cables always use two cables – one for left and one for right channel audio. This cable is functionally obsolete, replaced by digital cable standards like HDMI that carry video and audio together.



### USB

Many modern instruments now include built-in USB connectivity for next-generation computer control. USB can carry digital event messages over MIDI, or use software custom-made for specific instruments.

