

CABLES AND CONNECTIONS

Types of Connectors



XLR (Cannon)



Jack



RCA (Phono)



TOSLINK



MIDI



USB



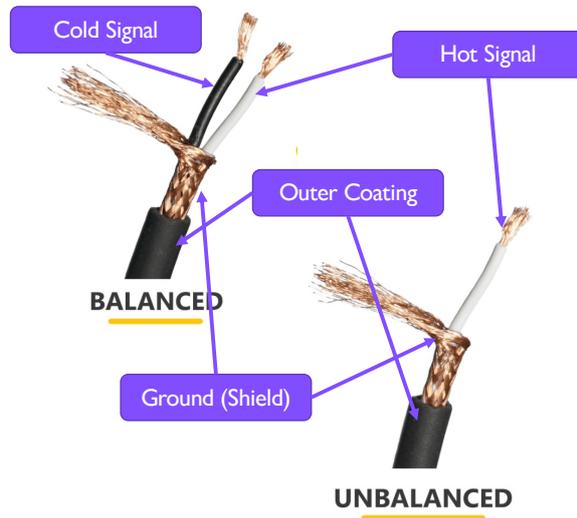
FireWire

TS Jack Cables – commonly used as guitar leads

RCA Cables – commonly used by DJs to connect turntables and mixers

Balanced and Unbalanced Connections

- **Balanced Cables include:**
 - XLR
 - TRS (Tip-Ring-Sleeve) Jack
- **Unbalanced Cables include:**
 - TS (Tip-Sleeve) Jack
 - RCA

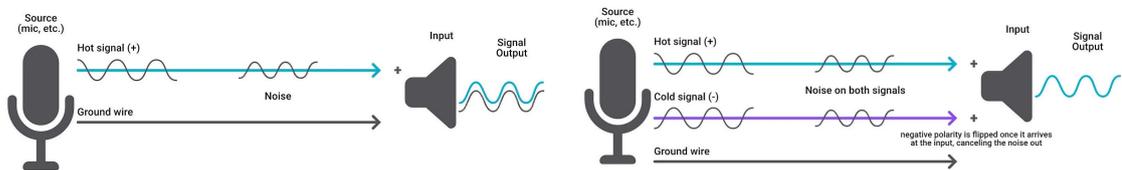


Just because a connector is balanced, does not automatically mean the connection will be balanced

All the points in your cable must be balanced for the connection to be balanced

Balanced and Unbalanced Connections

- Unbalanced cables have two connections (Hot + Ground) whereas balanced cables have three (Hot + Cold + Ground)
- Balanced connections can cancel out noise picked up on the cable using phase inversion

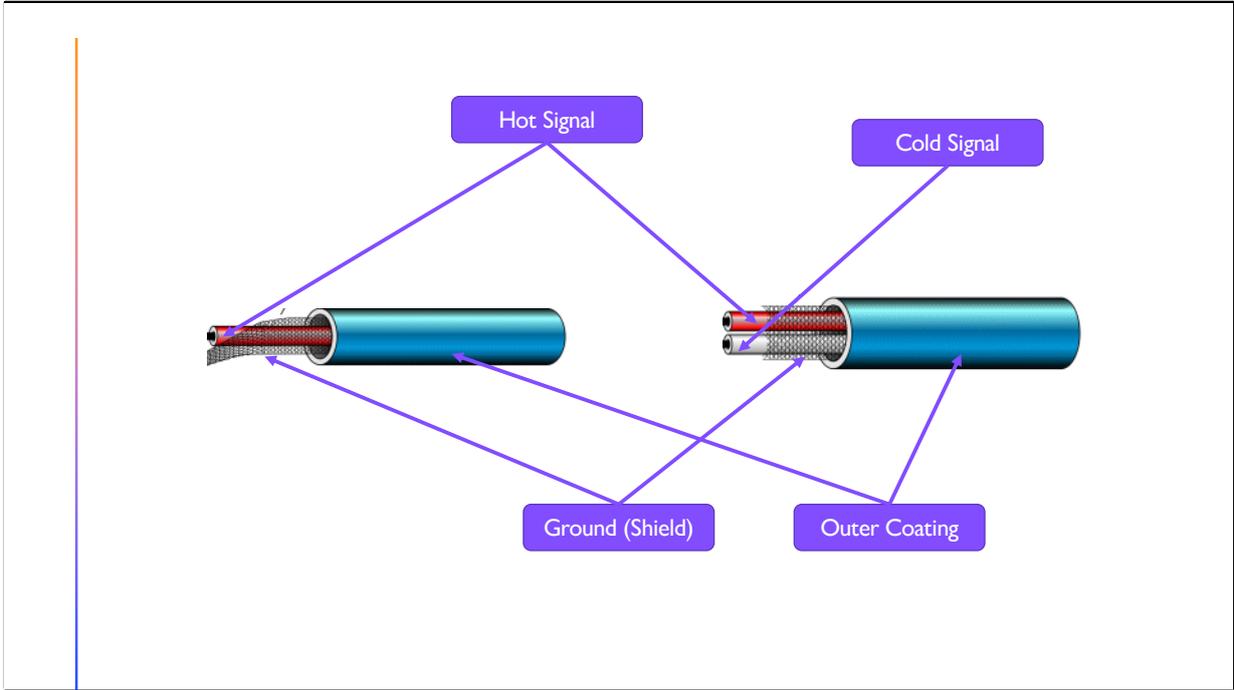


The cold signal is a phase/polarity inverted version of the hot signal

Noise is picked up equally on both signals (The polarity of the noise is the same on the hot and cold signals)

When both signals reach their destination, the polarity of the cold signal is flipped

- Both of the signals will now have the same polarity, making the resulting output signal twice as loud
- The noise on the cold signal will now have an opposite polarity to that of the hot signal, causing them to cancel out



Balanced vs Unbalanced

Balanced	Unbalanced
XLR	TS Jack
TRS Jack	RCA

Analogue vs Digital

Analogue	Digital
XLR	MIDI
Jack	USB
RCA (Phono)	

Glossary

Term	Definition
Balanced	A connection that has two signals in inversion to one another to reduce noise when put back into phase
Unbalanced	A cable that only has the signal cable and the connection to ground