

Phase cancellation Balanced vs Stereo (1/4" Connectors)

Problem:

“I’ve plugged my music player to the speaker using an aux cable, but it does not sound right, I can’t hear the voices “

Cause:

All JBL professional self-powered speakers have balanced inputs; feeding a Stereo signal into the Mono balanced inputs will cause audio phase cancellation, as both Left and Right channels get mixed incorrectly into a Mono input.

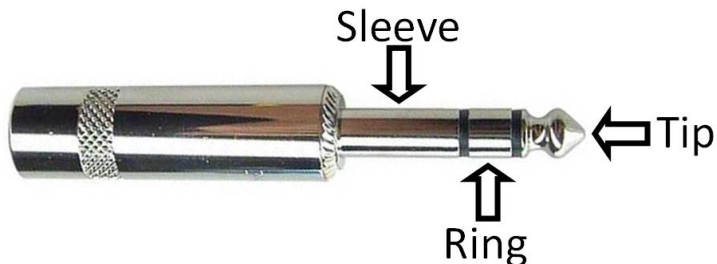
This audio phase cancellation occurs usually when using a Stereo to Stereo cable, like the one shown.



(CSM-1110 1/8" TRS Stereo to 1/4" TRS Stereo)

This is usually the **WRONG** cable to use for Mono Balanced inputs

Balanced connectors/plugs are physically identical to Stereo connectors/plugs. Both are referred to as TRS plugs, or Tip, Ring, Sleeve.



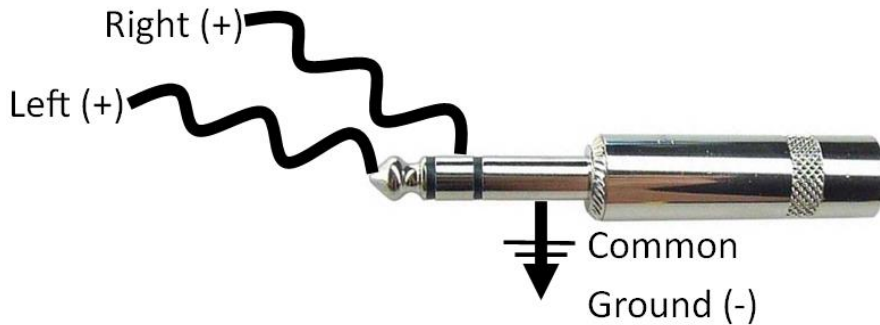
The difference is the signal carried by the Tip, Ring and Sleeve.

A Stereo TRS conducts two independents signals with a common ground:

The Left channel will be carried thru the Tip

The Right channel will be carried thru the Ring

And the common ground will be carried thru the Sleeve

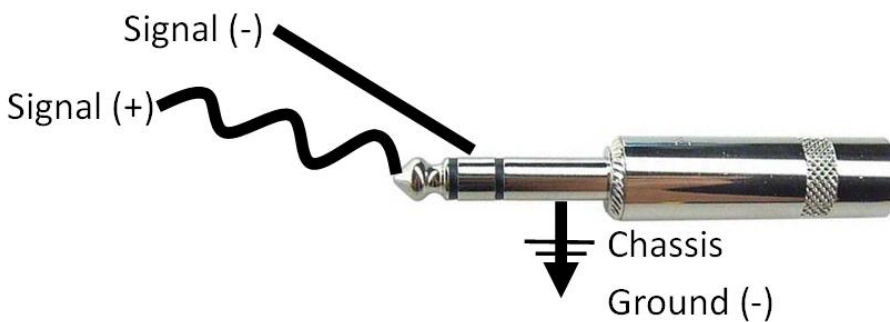


A Balanced TRS conducts a single, Mono signal, with a chassis ground.

The signal plus or positive will be carried thru the Tip

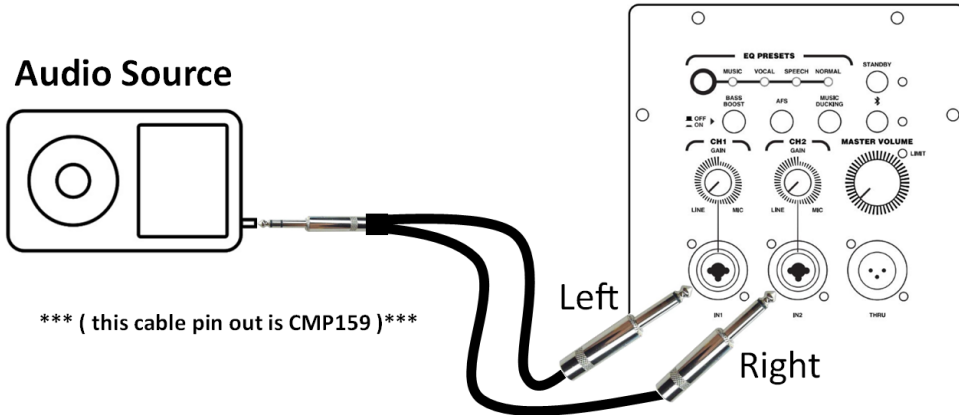
The signal minus or negative will be carried thru the Ring

And the Chassis ground will be carried thru the Sleeve



Solution:

To avoid the phase cancellation or incorrect mix of Left & Right channels, separate both channels and connect them individually to a single speaker,



Or connect them independently to two speaker to preserve the Stereo Sound Image.

