

NANO IDSD BLACK LABEL

BALANCED BUT NOT AS WE KNOW IT

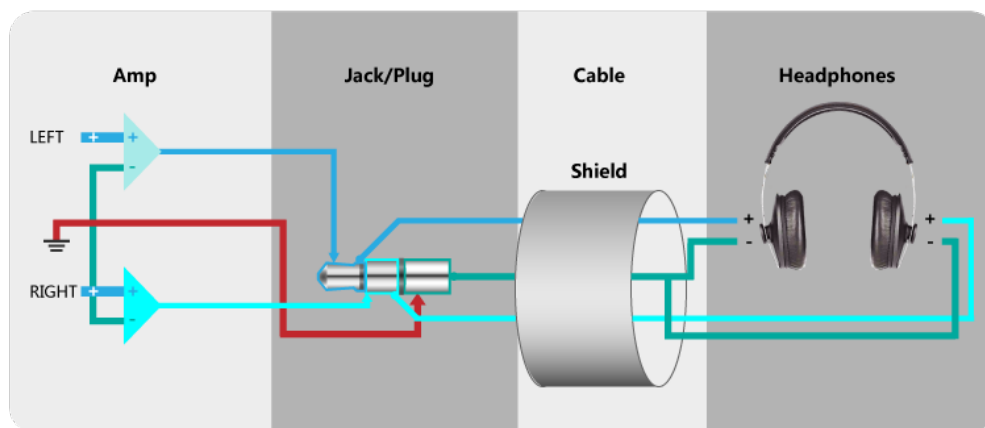
PART 1. ACTIVELY GOES WHERE NONE HAVE GONE BEFORE

The new nano iDSD Black Label sports a dual-mono headphone amplifier with 3.5mm TRRS balanced wiring all the way to the amplifier.

This S-Balanced technology means that despite the amplifier being single-ended, this delivers all the benefits of balanced wiring.

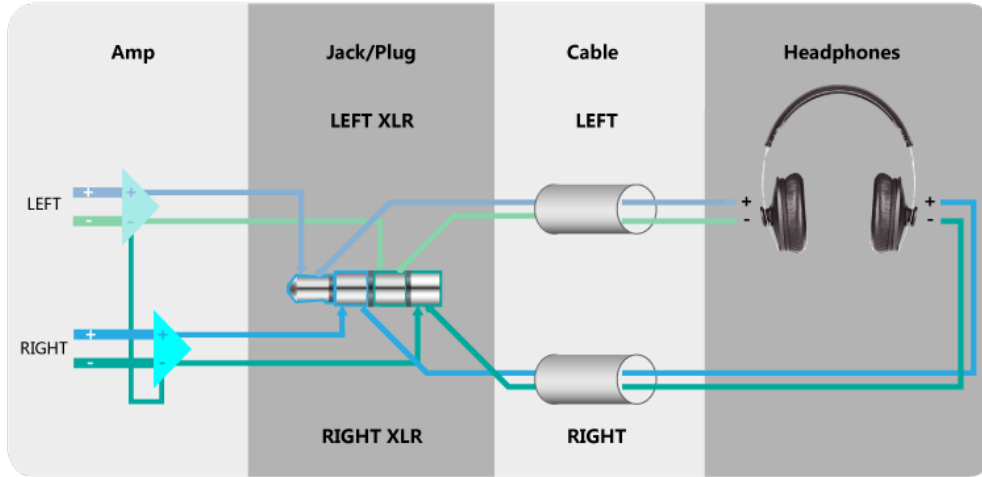
Why did we feel the need to develop this? Let's take a look.

The problem with TRS connected headphones:



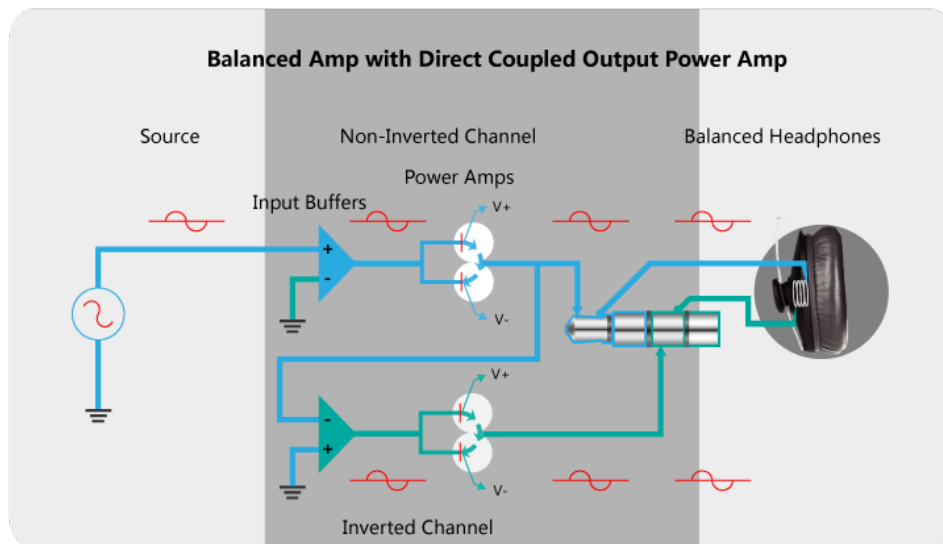
The left and right headphone shares a single ground connection. This causes crosstalk and extra distortion. The lower the impedance of the headphone, the worse the problem. IEMs, in particular, are heavily affected.

Balanced connection (can be TRRS though here shown with XLR):



Left and right 'negative' are separate, the negative connection runs all the way to the separate amplifiers and no crosstalk/distortion happens.

Balanced output Amp:



The second amplifier doubles both signal levels and noise/distortion, so such a balanced amplifier has more output but also MORE noise and distortion than an unbalanced amplifier. This perversely makes such a balanced connection LESS SUITED-ideally for IEMs. However, a dedicated negative wire per channel makes sure there is no crosstalk between the channels.

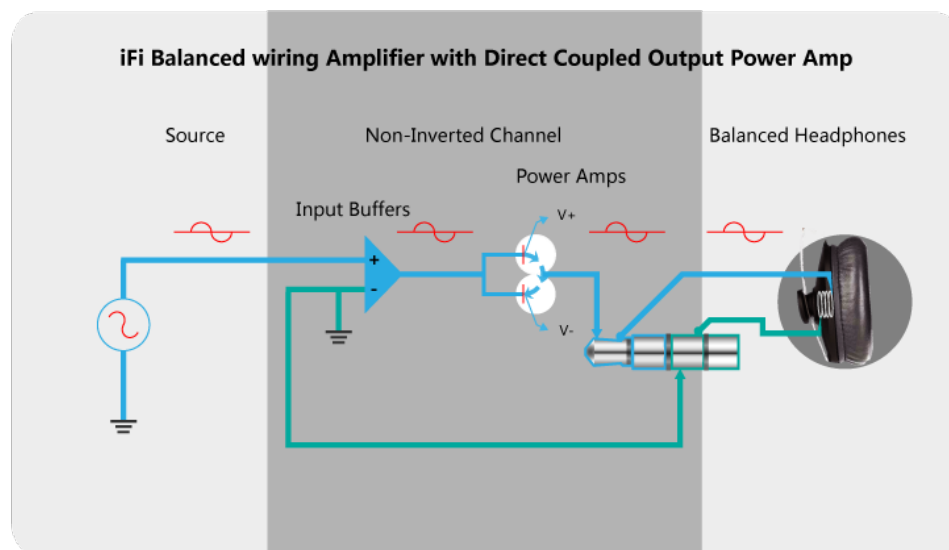


Tech Notes

Southport, UK – November 2017
nano iDSD Black Label

Plugging in unbalanced headphones with a TRS connector instead of TRRS will not be compatible, it will cause distorted sound and may damage the amplifier.

PART 2. iFi IDSD NANO BLACK LABEL SOLUTION



No second amplifier is used, neither is extra signal nor noise, nor distortion added, perfect for sensitive IEMs. Further including the iEMatch technology extends compatibility with ultra-sensitive IEMs. A dedicated negative wire per channel all the way to each channel's amplifier's star-ground makes sure there is no crosstalk between the channels.

Plugging in unbalanced headphones with a TRS connector instead of TRRS will cause zero issues and, in fact, will still cut crosstalk by 50%, compared to using a TRS socket.

All the benefits of balanced, with none of the drawbacks. Perfection!