Introduction to Music Production

Week1: About Type and usage of important studio cables.

Introduction

Hi, I'm Takahiro Kubo from Chiba in Japan (Japanese Disneyland is here!).
This lesson is for week 1 of Introduction To Music Production at Coursera.org. I will be teaching a type and usage of important studio cables.

Lesson

The kinds of cables are divided into two type. The main difference between its is the number of signals that can send/receive.

Please see the picture below. TRS cable has Ring part, but TS cable doesn't.

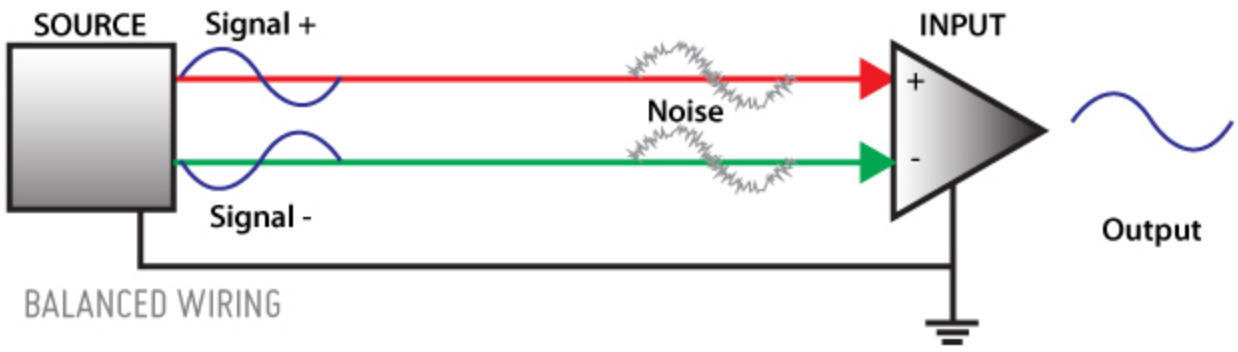
Here is the XLR cable. It has 3 pins.

Thanks to Ring part (or 3pins), cables can deal with 3 signal. It enables stereo and balance transmission.

	Unbalanced	Balanced	Stereo(Unbalanced)
Tip	Signal	Hot	Left
Sleeve	Ground	Ground	Ground
Ring		Cold	Right

The balanced transmission uses Hot and Cold signal to cancel noise (please see this blog for detail).

In the picture below, Hot is red arrow and Cold is green arrow. Hot and Cold is symmetric sound.



Balanced wiring uses two signal conductors plus a ground, allowing noise picked up along the way to be canceled through phase inversion.

When making output, computer synthesizes Hot and the inverted Cold. Because of its symmetry, the original signal is enforced, but noise is canceled.

XLR cable is only used for balanced transmission. RCA cable is mainly used for stereo (white is left and red is right). TRS cable is used for both (balanced/stereo).

It will be good to use TS cable in short range, and use TRS/XLR cable in long range (because if cable is long, noise will be likely to occur). Each cables can be connected through the direct box.

Reflection

I think if there are 5 pins in connector, we can use stereo and balance(Left/Right Hot, Left/Right Cold, Ground). But there is no cable like that. So it may be so complex to use.

I worked hard on this and I would love to know if I got everything right. Is there anything I missed or could have explained better?
Thank you for reading and critiquing.