

## Hooking Up - All About Connectors, Cables and Adapters

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So you spring for a brand new, super high quality soundcard. The specs are you new card are just outstanding and you expect to enjoy it for years to come. You quickly install it into your computer and run into a little problem when you attempt to plug your speakers into the card.

They don't match! The speakers have one type of connector on them and the new soundcard has a different kind. Oh, the humanity. Why in the world does this happen? Won't using an adapter degrade your audio quality? What kind of adapter do I need? Are my present cables OK to use? What is the meaning of life?

So many questions... Let's try to answer some of them.

### Connectors – the Audio Tower of Babel

So why in the world do we need hundreds of different types of connectors for our audio devices? The answer is that we don't and that we really only need to know about the 4 most popular types of audio connectors. We'll cover them hear for you and you'll find it easy. We promise.

First, why do we even need connectors? The answer is that we need to hook one set of wires to another. At the most basic level, here's a set of wires:



Now a set of speakers will also have a set of wires and to connect these to the other set, we simply need to twist the end together and then solder them. The problem with that is that it's a lot of work, requires soldering experience, and makes it hard to disconnect the cables later. Plus, you can get burned. Not a good idea.

So a connector simply lets us, easily and quickly, connect two sets of wires together. A set of wires could be any number, but with audio, it's normally two wires (for mono) or three wires (for stereo).

The bad news is that there are at least 4 common types of connectors used for audio. The good news is that we're going to tell you about them right now!

**Note:** These audio connectors come in two flavors – male and female. This makes it possible for connectors to, well, connect. You get the idea. If you don't, consult Masters and Johnson.

## RCA Connector



Named after the company and popular since the 1940s...

**Pros:** These are practically indestructible and many that are over 50 years old are in daily use today. They are cheap and easy to use.

**Cons:** Each connector can only carry one audio channel, so you need two of them for stereo. Plugging and unplugging requires two hands.

In the audio world, Red normally indicates the Right Channel and White denotes the Left channel.

## 1/8" or 3.5mm connector



Used on I-pods, walkmans and most PCs. The name denotes the size which is rightly 3.5mm but is almost 1/8". You can call it by either name.

**Pros:** Super small connector for pocket size devices.

**Cons:** Super small and somewhat fragile due to very small wires inside. Headphones using this will normally last only a short time if the wires and connectors are stressed at all.

This type of connector is available both in a stereo and mono configuration. A stereo unit will have two black bands as you see in the picture. A mono unit only has one black band.

## 1/4" connector



Looks pretty much like our 1/8" connector, doesn't it? But it's twice as big and far more rugged. Used extensively by musicians and pro audio types.

**Pros:** tough and built to withstand stepping on cables and spilling beer on them.

**Cons:** Bigger, heavier and more expensive. Not useful for very small devices.

Available in stereo or mono versions as above...

## XLR connector



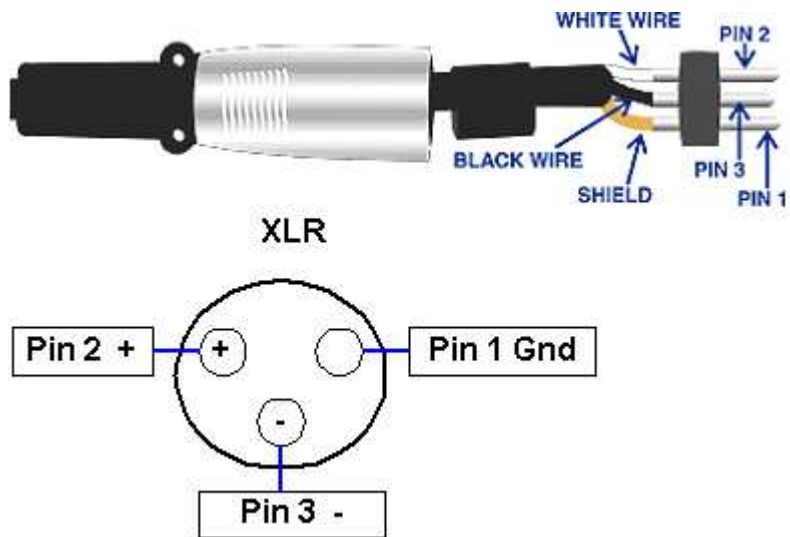
Now that's a serious looking connector. It's used extensively in pro audio circles.

**Pros:** Super high quality connector with locking connections and large surface areas

**Cons:** Much more expensive, much bigger, much heavier

These are often thought of as balanced audio connectors, but this is incorrect. They simply connect wires together just like any connector. These are, however, frequently used in balanced audio environments due to their ability to connect three wires. For an explanation of balanced audio (not needed for most folks doing audio restoration) click here: [www.hereitis.com](http://www.hereitis.com)

Here's a look at a schematic:



### Summary of fun facts about connectors:

- The main purpose of connectors is to hook together wires in a quick and easy manner
- Audio connectors are only a tiny fraction of the tens of thousands of types of connectors
- In the world of audio connectors, most of us only have to be concerned with the four shown above
- Stereo connectors allow the hookup of 3 wires – Left, Right and ground
- Mono connectors only all the hookup of 2 wires – Signal and ground
- Any of our stand connectors shown above – in either their male or female configurations – can be “adapted” to any other

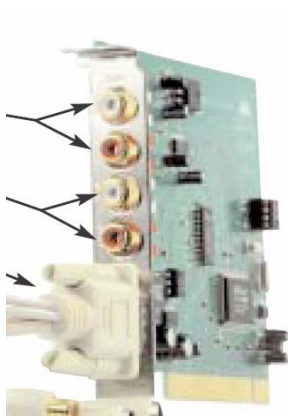
## Adapters

Now that we know the names of the common audio connectors, we can figure out how in the heck to connect our speakers to our sound card.

Have a look at your speakers. This is the type of cable that comes from them. It used to plug right into your computer, but the new soundcard has different jacks. Using our new encyclopedic knowledge of connectors, we identify this as a 3.5mm, male, stereo connector.



Here's a look at the jacks on the back of the soundcard:



No matter how hard you try, you can't plug these two in together – and have them actually work. Hammers, drills and other tools won't help. An adapter is the answer.

That's because our new soundcard uses RCA jacks and our speakers have a male, 1/8" plug – we just need to use an adapter so that they can plug together.

### Choosing our Adapters

In this case, we'd end up using something like this pair of items:

First we take use this cable:



Then we plug one of these onto the end with the 1/8" connector:



This has a female 1/8" jack on each side.

Now imagine what we have – we've got a cable with two male RCA plugs on one end (to plug into our new soundcard) and we've got an end with a female 1/8" connector to use with our speaker connector.

Boom, crash and Kapow – we're done. We've used adapters to fix our tower of Babel problem.

Summary of info on adapters:

- Adapters make it possible to connect different types of connectors together easily
- Adapters are generally rugged and do not normally fail in use.
- Adapters come in both stereo and mono and one would generally need to have the correct type
- You can choose which adapters you need by examining the two types of connectors you are trying to connect together

## How About Cables?

You may notice that the cables sold by Tracer are not normally plated with Depleted Platinum, are not oxygen free due to having been made on an outlying planetoid, nor are they so thick and heavy that you could run the power for a city block through them.

Nor do they cost as much a week at Disneyland. Our cables are just plain everyday wires designed to carry normal audio signals.

Now we know that this might not sit well with everyone. In case you don't know, except for World War II, the war of cables has been the most bitter in history with one side claiming that expensive cables offer better sound and the other side saying that this is bunk.

We'd rather hit our toe with a hammer than engage in this argument; so only buy our cables if you want to.

There. That was easy, wasn't it?

Tracer Cables and Adapters

Here's what we carry. With these, you can connect together just about any normal type of audio equipment.

<http://www.tracertek.com/khxc/index.php?app=ccp0&ns=catshow&ref=audcabs>