

# CHOOSING THE RIGHT PATCH CABLES

Patch cables are short cables which connect two or more pieces of musical equipment that are generally less than 5' away from each other.

There are 100's of different types of patch cables used:

- in equipment racks
- in keyboard rigs
- in pedalboards or between effects
- in patchbays
- to "Y" two or three pieces of equipment together
- to "jumper" from one speaker cabinet to another

## The Benchmark

There is no patch cable benchmark. They come in all shapes and sizes and the connector combinations possible are mind boggling.

## The patch cable situation

Patch cables are used for guitar level signals, line level signals, microphone level signals and speaker level signals.

The biggest problem with patch cables is having the right ones at the right time to get through today's interface mess as painlessly as possible.

The reason the audio industry needs so many different patch cables is that, over 50 years, we have been unable to standardize on one connector for one job.

If you get a new TV or get cable TV in your home, the connector on the TV and the one in the wall are always the same. The connector is called an "F" connector and is universal.

Instrument and line level connectors can be 1/4" phone plugs, RCA phono plugs, 1/8" mini plugs, or any combination depending on the hardware we need to connect together.

Balanced signals can terminate at XLR male and female connectors, as well as 1/4" balanced connectors and balanced 1/8" mini plugs.

Professional patchbays usually use either military style 1/4" plugs (also widely known as long frame or PJ connectors), or tini-telephone (TT or bantam) plugs.

Typically keyboards and P.A. equipment are at line level, different from instrument, mic and speaker level.

Confused yet? All of these connectors have evolved over 50 years and are used interchangeably

for these reasons: cost, reliability or real estate (on the back panels of equipment).

## The Problems

After 26 years of spending enormous amounts of time and money learning to hook up this complicated industry, we are in awe of the standard bearers (the A.E.S. — Audio Engineering Society) total inability to get anyone to agree to anything.

By its very call out the XLR connector is Pin 1 ground, Pin 2 hot, Pin 3 cold. There is still debate in some camps on whether Pin 2 or Pin 3 is hot.

Manufacturers use whatever jacks they want to use, depending on back panel real estate, and costs. In fact, we are concerned enough to feel that equipment manufacturers ignore the real world after their output panels.

Their concern is not making it easy or simple for you to hook up their gear to anyone else's. Fortunately for Pro Co, that falls on our shoulders.

Although 43% of all the items we build are 1-off products, never to be built again (at least this year), we think that is a sad commentary on the state of the industry.

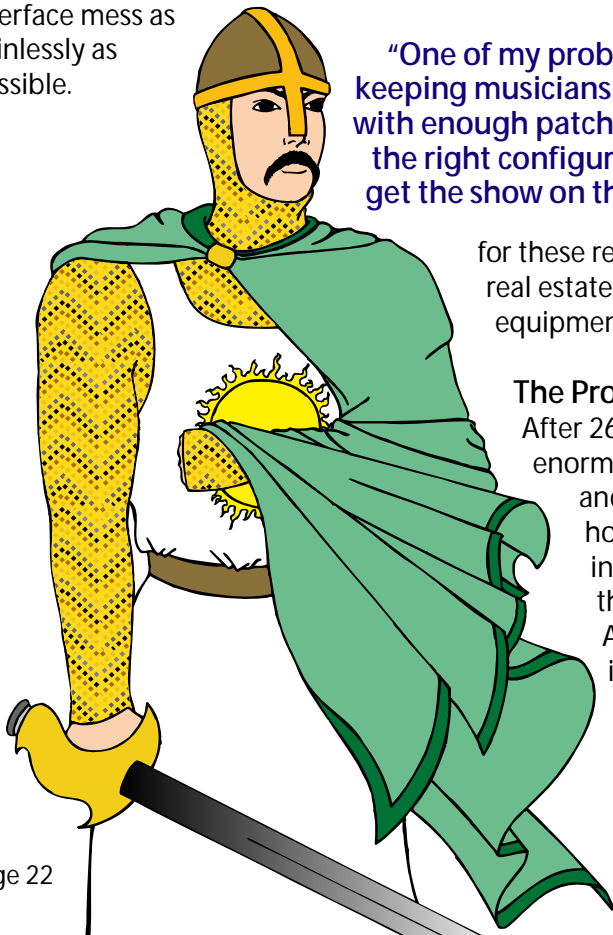
Our industry flat does not have its act together; it does not have an "F" connector. Does that mean we, as an industry, get an "F" in our ability to make and demand adherence to a standard. We think so. But enough soapboxing for one cable guide.

## The solutions

Patch cables typically do not need the durability and flexibility of primary guitar cables or microphone cables. They do need good shielding and good sonics. Cosmetics do not matter a whole lot, since no one will ever see them except you or your roadie.

Nonetheless, Pro Co still makes great looking, great sounding, reliable, flexible, well-shielded patch cables because many musicians still want the assurance that their rig will sound great, every where, every time. Sacrificing that for a few bucks is not worth the money.

**"One of my problems is keeping musicians supplied with enough patch cables in the right configuration to get the show on the road."**



## A word of caution

There are patch cables available that are bubble-packed like fishing lures in a hardware store. There are generally very inexpensive and have very little copper in them (they do not need much copper to get the signals around, but there is no strength to the wire itself). These cables have a tendency to quickly "open" (break) or short together the conductors or one of the conductors to the shield. We do not recommend them, but in a pinch or if you are on a tight budget, they will work to "get you by". If you are going to buy one of these cables, at least buy it in a music store. These cables can also be purchased at stores that sell radios, and theirs are not as good.

## Typical patch cables include:

### Unbalanced Patch Cables

- 1/4" Phone to 1/4" Phone
- 1/4" Phone to RCA Phono
- RCA Phono to RCA Phono

### Balanced Patch Cables

- XLR Male to Balanced 1/4"
- XLR Female to Balance 1/4"
- Balanced 1/4" to Balanced 1/4"
- Balanced 1/8" Mini to Balanced 1/4"
- Balanced 1/8" Mini to Balanced 1/8" Mini
- Balanced 1/8" Mini to XLR male
- Balanced 1/8" Mini to XLR female
- XLR Female to XLR Male (standard microphone cable)
- TT (tiny telephone) to everything else
- PJ's to everything else.
- Sound card cables from your computer to your speakers (or to balanced inputs on a mixer, or whatever the presenter of a speech wants his/her computer hooked into.
- Sound card balanced Mini output to a summed 1/4" phone plug input.

Get the picture? It never ends. Now we have professional (XLRs), semi-professional (1/4" phone), consumer (1/8" balanced Mini) and computer (pick whatever you want) and our job is to hook it all together so anything can talk to anything else — so your music, your speech, your convention or your message can be heard, with complete clarity, like the 1920 inaugural speech we told you about in the Digital chapter.