
Tips and Tricks: Is That Really a Line Input?

How to make sure you get what you want out of a pre-amp.

At Aphex, we manufacture outboard microphone preamplifiers. We believe that they are great sounding, and that opinion is shared by thousands of users. We did notice, however, that a few customers complained that they could not hear the quality improvement that they were expecting. When we inquired as to how our preamplifiers were interfaced into their systems, we found that almost all the problems arose from the confusion over whether or not an input that is labeled "line" is a true line input.

It's all pretty simple. The main purpose of using an outboard preamplifier is to improve the audio quality over what would be available in the system without that outboard preamplifier. Since a microphone preamplifier raises the low level output from a microphone up to line level, the output of the outboard preamplifier should be fed into a line input. The problem is that many line inputs are not true line inputs, but rather microphone preamplifiers with a pad engaged. This design eliminates the need for a separate input stage. While it does provide some economy, it can impact audio quality.

The pad does provide sufficient headroom so that a line level input will not drive the line input into overload. But cascading the output of a preamplifier through another preamplifier defeats the main purpose of using a higher quality outboard preamplifier — improving sound quality. It is quite easy to determine if that line input is a true line input or a padded preamplifier. If the preamplifier trimmer still adjusts the level, then that input is a padded preamplifier. But don't despair; there are solutions. Some mixers have a few true line inputs as well as padded preamplifier inputs. Some mixers and interfaces have digital inputs, so if the outboard preamplifier has a digital output, use that as a source. And then there is the channel insert connection.

Most channel inserts are single 1/4-inch TRS jacks. Check the owner's manual for your particular mixer, but most often the tip is the send from the channel and the Ring is the return to the channel. The output of the outboard preamplifier is fed to the return of the insert. This is an unbalanced connection, so proper care should be used to ensure proper polarity if the preamplifier output is balanced. If there are separate insert send and returns, simply connect the preamplifier output to the return.

The advantage of using the channel insert is that it bypasses at least one audio stage — the mixer's preamplifier. If the outboard preamplifier is indeed higher quality than the preamplifier in the console, that quality difference should be apparent. If that difference is not apparent, then perhaps the console preamplifier is better than the outboard preamplifier. Whichever you decide is better, the audio quality will certainly be better than cascading one preamplifier into another.