

DI Boxes (Direct Boxes)

DI boxes are used for two main reasons:

- *to change the impedance of a signal.*
- *to balance an unbalanced signal.*

The most common use for a DI is for live performances, to connect a musical instrument to a mixer that's far away. DI's are also useful in the studio.

A DI changes the impedance of a signal. usually from Hi-Z to Lo-Z. Then you can run a long mic cable without the signal loss problems associated with long Hi-Z cables. Less commonly, a DI is used to go from Lo-Z to Hi-Z, for processes like re-amping.

The Direct Box also balances an unbalanced audio signal, so that any noise that is picked up on the way to the mixer gets removed.

Most DI's have a pass-through option. The incoming Hi-Z signal (from the synth for example) is echoed back out. This lets the musician use an amp on stage without affecting what goes to the mixer at the back of the hall.

DI's provide ground lift, to minimize ground loops. Some DI's include pads, filters, and polarity switches.

There are two kinds of DI boxes: passive, or active.

A passive DI doesn't need a power source. Passive DI's are good because they don't require batteries, they're simple to use, and can have excellent quality.

An active DI relies on a battery, or phantom power from a mixer. Active DIs can vary their response to the changing impedance of the incoming signal.

