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Recording and Producing for Guitarists

Lesson 1:
Connecting Your Guitar to the
Computer

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Connecting Your Guitar to the Computer



The first step in recording guitar is to get our guitar signal into the computer. The best way to do this depends on what equipment and software we have, and how we intend to use it.

The guitar signal needs to be strong enough to give us a solid recording. This is an issue because the signal right out of the guitar is weaker than what most computer and sound card inputs need to receive. It's also a high **impedance** signal. Computers and sound cards (or computer audio inputs) are looking for a low-impedance, line-level signal, while a guitar puts out something at less-than-line-level, at high impedance.

The best way to plug in is by using either an **instrument input jack** or an **input specifically designed for guitar** (or bass). These are found in a variety of places, such as some audio interfaces, most microphone pre-amps, some mixers, most guitar multi-processors (like the [Line-6 Pod](#), [Vox ToneLab](#), etc.), direct boxes (more on these later), and of course, all guitar amps.

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Some computer audio interfaces feature instrument inputs. If you have one of these, you're ready to go. An instrument input is usually labeled as such, whereas a dedicated guitar input might say "Guitar In" or "Hi-Z (high impedance) In." This high-impedance input is best suited to the guitar's characteristics, but a typical instrument input will do nearly as well.

Instrument inputs and especially hi-Z guitar inputs are designed to match the level and impedance of a guitar signal, and therefore give you a stronger, cleaner signal, usually with a wider frequency range.

If you're using an external audio interface, you may already have an instrument input ready to go. Ideally it should also have two microphone inputs (to be used later in the course). Here's a partial list of interfaces that have them:

1. Premium: [MOTU 828](#)
2. Mid-price with excellent specs: [PreSonus Firebox](#)
3. Budget: [M-Audio FastTrack USB](#)

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A mixer's line input might be a solution, if it has an input level control that will allow for a weaker signal than the usual line level. Many mixers (including all Mackies) do this. This is not an ideal solution (because of the mixer's lower input impedance), but it will usually suffice in a pinch.

A direct box (or DI box) will work beautifully, and cost-effectively, if you already have a mixer. Its purpose is to convert your guitar to a microphone-type signal. The output of the DI connects to the mixer's microphone input with an XLR type cable.

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You can plug your guitar directly into a sound card input (which will probably require an adapter or two), but it's not a great way to record. It is, however infinitely better than not making a recording!

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Impedance

Impedance is the sum total of all the factors that tend to cause resistances to electric flow through a device. In the simplest terms, we want high-impedance signal sources (i.e. most guitar pickups) to be connected to high-impedance inputs and low-impedance signal sources to be connected to low-impedance inputs.



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