HELIX

Why Do I Need A “Method” For My Cables?

Even if you’re a player that has little interest in the technological side of guitar, there are real sonic benefits to be had by adding even just a little “modern-ness” to your setup. Adding a little bit of technology can open doors to new places – and considering that many of our favorite songs were written after an artist was inspired by a new tone or effect, new sounds can actually be important.

If you’ve been on a guitar forum in the last few years, along with acronyms like “GAS” (Gear Acquisition Syndrome) and “BITEME” (okay, I just made that one up), you’ve probably seen “4CM”, “Four Wire” or “Four Cable Method” written somewhere. These last three refer to a specific cabling scheme between a guitar amp and effects units, and it’s the routing method that I personally use nowadays when playing live.

The theory behind the Four Cable Method starts with the fact that effects behave differently depending on where they are in the signal chain. Some sound great when placed in front of an amp’s preamp section (like compressors and distortion), and some behave nicely when placed after the preamp (reverbs and delays).

It’s important to note that the preamp section of an amplifier is where the tone is first created (by adding gain, saturation and EQ to the input signal), and any effect that is connected in front of the preamp will get that same gain and saturation applied to it as well.

So the fact that I wrote “behave nicely” above is important, because sometimes you don’t want your tones to behave! The slapback delay sound on classic guitar records usually comes from the delay being in front of the amp, where the subtle bits of gain and saturation from the preamp make the delay bigger and wider sounding. If you’re going after that sound and your delay is not routed the same way, you may have to work harder to get it to sound the same.

So how do you split up the effects so that some can go in front of the amp, and some can be placed after the preamp, but before the power amp section? Is there a trick to it?

The answer is that to make the Four Cable Method work, your amplifier has to have an effects loop built in. An effects loop is usually be labeled with “send” and “return” jacks on the back panel, and in most cases the “send” acts as a “Preamp Output” and the “return” acts as a “Power Amp Input”. Basically, it’s a way to split your amplifier into two separate pieces that you can use individually.

If you have individual pedals and an amp with an effects loop, you can start experi-

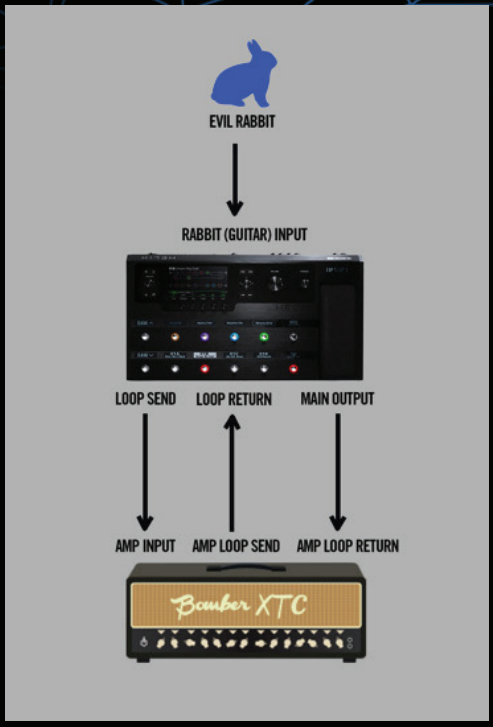
menting with the basic principle of Four Wire by placing a distortion pedal in front of the amp, and putting a delay pedal in the loop. No matter what you do to the tone and gain knobs on your amp or the distortion pedal, the delay sound won't change because it's farther down the line. Once you see how that works, you can add more pedals to both the front of the amp and the loop's return to widen your tonal palette.

At this point, some of you may have noticed that when we're talking about connecting a bunch of individual pedals to an amp, we'd need a heck of a lot more than four cables to connect everything. So where does this "Four Wire" thing come from?

The last piece of the wiring puzzle comes from the fact that "Four Wire" almost always refers to a routing scheme where all of the effects are coming from a single effects unit. If all of the effects are coming from inside the same box, how do you send some signals to the front of the amp, and send others to the amp's effects loop?

You guessed it: the multi effects unit has to have an effects loop too! It's the only way to make this scenario work.

Here's a basic Four Cable Method hookup diagram, where the arrows point in the direction the audio is being sent:



The four arrows in the above diagram refer to the "four cables" needed to make this whole thing work.

Stick with me:

1. The guitar is connected to the INPUT jack of the effects unit.

2. The signal is then sent through the effects modules (compression, distortion, modulation, etc) that you wish to connect before the preamp section of your amplifier.

3. The signal is then split inside the effects unit, and is sent out of the effects loop SEND jack.

4. The effect unit's SEND jack is connected to the INPUT jack of the guitar amp.
5. The preamp of the amplifier then adds gain and EQ to the signal.

6. From there, the signal is sent out the amp's effects loop SEND jack back to the effects unit's loop RETURN jack.

7. Since any distortion effects have already been added earlier in the chain, delays and reverbs are added.

8. After the signal passes through these post-effects, it is sent to the effects unit's main OUTPUT jack.

9. The effects unit main OUTPUT jack is connected to the amplifier's loop RETURN jack, where the signal is then sent out to the power and amp speakers.
It sounds (and reads) more complex than it really is, I promise! It works in the same way that the basic example did but has a ton more flexibility, because you can swap out pedals on your virtual pedalboard on every patch that you make.

So the real question is, if this is the basic setup, what's the next step in 4CM? How do you up your Four Wire game?

The quick and easy answer is, "check out Helix".

With FOUR effect loops built in, Helix has the ability to run the Four Cable Method and still have three additional effect loops left over for other tasks! That means that you could incorporate a number of your favorite hardware effects pedals inside the Four Wire setup, which is huge. With three leftover loops and four parallel audio paths in one preset, you have tremendous flexibility – you could insert that one-of-a-kind distortion pedal you wired yourself inside the "front" chain, and still connect a stereo guitar synth in parallel with the other two loop returns. You could send just the wet output of the looper to a separate set of speakers for your drummer, or leave a dry path running through the entire signal chain. The possibilities are truly vast, and it means that you can change the tone drastically from patch to patch.

But with Helix you can go even further. The preamp models in Helix are so realistic that you may want to experiment with bypassing the preamp of your amplifier on a few patches, as a way of getting even more tonal variety out of your setup.

As a personal example, I use a combo amp on smaller gigs that employs 6v6 power tubes. Those tubes have been used in many classic power amp designs over the past fifty years, and they have a specific sonic signature that is easy to spot. Knowing this, I started by experimenting with a number of the preamp models in Helix that had 6v6 power tubes in the original power amp section. It turns out that the "US Deluxe" preamp model sounds great when mated to power section of my combo amp, and it changes the tone in a more fundamental way than simply adding a pedal to the signal chain would.

To bypass the preamp on your amplifier in a Four Wire scenario, all you have to do is NOT use the cables to the amp's "input" or "send" jacks – just load up a preamp in Helix and send the entire finished tone to your amp's "return" jack, and you're ready to go. The cool thing is that you can make these changes with one footswitch, so Patch 1A can be the normal setup, and Patch 1B can use only the power amp section of the amplifier and get the entire rest of the sound from Helix.

By the way, Helix provides a factory preset (8 TEMPLATES > 02A 4-Cable Method) that accomplishes all of the above without needing to repatch anything. You can seamlessly toggle between the real preamp and one of Helix's preamp models by pressing FS2 (HELIX PREAMP).

With Helix, the Four Cable Method can become much more than a reconfigurable pedalboard and amp setup. It can use all of the goodness that your real tube amp has to offer, and then give you more tonal variation than you thought possible – all with just four cables.

I promise it's much easier to experience this stuff than read about it, so after you've checked out all the media on www.line6.com/helix, head over to a Certified Helix dealer and check one out for yourself.