

Solo Guitar Recording

Getting “good” sound for recording your guitar doesn’t require the most expensive gear, but it does involve paying attention to the details. Lots and lots of details. When I record at home, I set my sights on achieving a sound quality that can hold its own with even the multimillion-dollar professional recording studios. When I recorded my last studio album (a duo guitar CD with John Stowell) we visited one of those high-end facilities where one single Neumann microphone cost more than all of the equipment in my home studio combined. And yeah, it sounded great, but no better than what I’ve learned how to achieve in my 24/7 available home studio.



So, what is good guitar sound? Let me put it this way. Good sound is only as good as the end result of what’s perceived in the ears of your listeners. By this definition, a portion of the complete signal chain is beyond your control. This is important to keep in mind when considering that almost everyone describes good guitar sound as being realistic and natural sounding. And that gets to one of the biggest problems. Getting a sound that is realistic and natural means your instrument must sound like it is situated within a real space. The room or hall is every bit as important as is the capture of the guitar itself. If the end listener is using earbuds or headphones they will for the most part hear your sound with the space as you record and create it. But when they listen through speakers in their room, then they will hear your room and their room combined, an acoustic mash up which is a very difficult to manage on the production end. Maybe they’re even listening in their moving car! This is the reason audio engineers will always check their work through a variety of speakers and playback environments to ensure their sound is “translating” as best as possible.

Our most controllable approach is to avoid recording the sound of your room in the first place, and to then create the recording space artificially using high quality digital reverb in your mixdown. If you have access to doing a live recording in Cleveland's Severance Hall, then by all means disregard this suggestion. Otherwise, I do this by placing my amplifier microphone as absolutely close to the speaker element as I can get it. This means the microphone will have all the direct sound and virtually no reflected sounds coming from bouncing around the room. It also helps to keep the overall volume low and to surround the back and sides of the mike with some acoustic foam, fabric or other sound absorbing material. You will have to experiment quite a bit to find the perfect spot for the mike- and micro adjustments can make huge differences when close-miking a speaker cab. The best way to do this is to get some long wires and play your guitar from a different room and listen to yourself in headphones while a buddy moves the microphone around in front of the cab. Often the sweet spot is somewhere near two thirds the way from the center cap to the rim of the speaker, but your mileage will vary. Oh, microphone angle matters too- a lot, so there are simply way to many combinations of this trial and error process to do without some helping hands. Even better, is if you can have one helper play the guitar while someone else moves the mike, and all YOU do is listen from a distance away from both of them. Then you can really hear what the mike hears.



Once you have the mike in the perfect sweet spot, I would recommend using as little of the amp's reverb as you can get by with. Remember, we're going to be adding digital reverb to the signal later to create the illusion of a room, stage, concert hall or whatever you want, but amp reverb is really different than the reverb built into your amp. One caveat, if your amp has stereo reverb and true stereo output to two speakers then this can be fantastic as long as you use a stereo microphone and go through all the same paces to find the perfect position to not only get the best tone, but also the ideal stereo image

(illusion of space). I mention this because it's exactly what I do on my recordings. I'm using a small battery powered Roland micro-cube (bass Rx model) stereo amp and close miking it with an Audio Technica 8022 stereo mike. I'd never dream of using this amp for live gigging, but it's sweet, flat and natural at low volume and it is absolutely dead quiet- not the slightest bit of hiss or hum. I won't dwell on this, but nothing is a bigger buzzkill for me than hearing amp hum in the quiet spots of an otherwise pristine recording. Might as well not have even bothered to tune the guitar 😊

I'd like to mention at this point that another part of a realistic sounding guitar is capturing the little things associated with string noises in the air, little finger squeaks, the chirp of the pick's or fingernails scratching on the string's windings or even a little bit of breathing from the performer. I use a large diaphragm condenser mike (Rode K2) about a foot or two away from the guitar (again, move it around a bunch for your personal sweet spot) and then mix in at low level to combine just a hint of it in the final mix.

Now that I have recorded two tracks of guitar it's time for the postproduction steps, or what's simply referred to just as "post". First, I want to come up with the right blend of the close mike speaker cab with the mike that's close to the guitar body. The blend I typically wind up with is 80% to 90% in favor of the amp cab, so truly just a pinch of the string noise channel goes a long way. The next question is to examine the frequency balance of our sound and determine if any EQ is called for. If the microphones are halfway decent and well placed to begin with you may well find that there is zero need for EQ. In fact, if you need to lean on EQ at this stage you've probably missed the mark on mike placement and would be better served going back to repeat that step as "fix it in the mix" will never be as good as getting right at the source. EQ can also be used to help keep tracks clean. I will usually insert a single band of low cut that rolls off all sounds below 60hz. Given the low E string on guitar is 80hz, this has no impact on the sound but does eliminate low level infrasonic noises that travel through walls and buildings.

As mentioned earlier, artificial digital reverb is the most important tool in the toolkit for creating the right space to surround and envelope your guitar. In most basic terms, reverb is often described as wet or dry, and indeed, most guitar amp reverbs have but one knob to control how much. A quality plug-in reverb in your DAW will have a great many more adjustable parameters and it's well worth the time to experiment and listen for all of the nuance that tweaking these will do for you. My all-time favorite reverb is a plug-in call Altiverb. It's what is called a convolution reverb because it uses actual impulse samples recorded in real spaces, including some of the best concert halls and cathedrals round the world, and digitally maps these impulse responses to the recorded track you feed it. In my opinion, it's simply the best approach to achieving that natural and realistic space.

Once the reverb is dialed in, I'm pretty much done, but there are still a few steps before it's ready to leave the lab. I mentioned earlier about ensuring that the mix will translate to a variety of playback situations. Two things I have found to really help with this are Imaging and Limiting plugins. Waves is a company that make a large number of DAW plug-ins, and among my favorite is the S1 Stereo Imager. This program, which is referred to a psycho-acoustic processor, widens the sound by introducing low levels of phase reversed signal L into R, and R into L. It's a

little bit like ear candy, so be careful of the temptation to overdo it, but this seems to make everything sound better, a little more open, a little more air, on any set of speakers or headphones you throw at it. The other processor I always use is a limiter. This is similar to a compressor except that it's set in a way that the peak volumes are only affected at a set threshold and everything below the threshold is untouched. It should only engage on the loudest peaks and have the effect of making all of the softer sections of the music louder with no sonic impact. Judicious user of compression on a guitar track in a band recording can really help, but I can safely say I would never use compression on a solo guitar recording. My choice of limiter is to go with either the Waves L-1 plug or to use the "Transparent Master" limiter plug that's built into Davinci Resolve, the video editing software I use, as the final step before rendering my finished video.



Ok, almost done! Just a couple of notes about delivery format. If recording for CD you have to use 44.1kHz 16 bit audio files. But for YouTube, Facebook and other social media, you can upload 48kHz 16 bit audio. Since most of my home studio output these days is for YouTube video, I always go at 48kHz since it's higher sampling resolution. I used to play around with recording at 196K and 32bit, but by the time you had to convert the files back to the limits of the delivery platform I'd find it didn't sound any different, so not worth the trouble and extra work.

I hope this helps you on your journey to better solo guitar sound. If I were to sum this all up though, I'd say the two most significant things you can do to instantly improve your sound is better microphone placement and reverb management. Happy tracking!

-Mark Kleinhaut 1/20/2022