

BM.

REFERENCE

Glossary

Plain-English explanations of the technical terms used across these guides.

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These guides use terms that are second nature in a studio but not necessarily anywhere else. This page explains them in plain English, so you can follow along and prepare with confidence. No audio engineering background required.

1. File & Audio Basics

Sample Rate

How many times per second audio is measured when it's converted to digital, given in Hz or kHz. A higher sample rate captures more detail in the upper frequency range. In music, you'll mostly see two: 44.1 kHz (the CD and streaming standard) and 48 kHz (common in video, and increasingly in music production too). What matters most is that every file in a session uses the same sample rate. Mixing rates between tracks causes pitch and timing errors.

Bit Depth

How much detail each individual sample captures, which sets the dynamic range: the gap between the quietest and loudest sound a file can hold without noise or distortion. 16-bit is the delivery standard for CDs and streaming. 24-bit is the standard for recording and mixing, since it leaves far more room to work with before a final file gets printed. If you're asked to export at "24-bit, 44.1kHz," that's simply the technical format your files should be saved in.

WAV vs. MP3

WAV is an uncompressed format. It stores the full recorded audio without throwing anything away, which is why it's the standard for tracking, mixing, and mastering. MP3 is a compressed ("lossy") format that discards audio data to shrink the file size, which measurably reduces quality. Record, track, and exchange audio as WAV (or AIFF) files. MP3 is fine for a quick reference or a listen on your phone, not for anything that still needs work done to it.

dBFS

Short for decibels relative to full scale, this is how loudness is measured inside a digital system. 0 dBFS is the absolute ceiling; nothing can go louder without clipping. Because of that ceiling, dBFS values are always zero or negative. A peak of **-6 dBFS** is quieter, and safer, than a peak of **-1 dBFS**.

Clipping

What happens when a signal tries to exceed 0 dBFS. Digital clipping is a hard, ugly distortion that can't be undone afterward, unlike most other mix problems. Leaving healthy headroom is the simplest

way to avoid it.

Headroom

The space left between your loudest peak and 0 dBFS. Leaving headroom means there's room for someone downstream, a mixing or mastering engineer, to add processing like EQ or compression without anything clipping.

Stems

Individual instrument or vocal tracks exported separately, like `Kick.wav` , `LeadVox_Main.wav` , and `Guitar_RhythmL.wav` , rather than one single stereo file. Sending stems instead of a single bounced-down mix is what actually gives a mixing engineer room to shape your song.

2. Recording & Tracking

DI

Short for Direct Input, sometimes called a DI signal or DI track. A clean, unprocessed recording of an instrument, usually a guitar or bass, taken straight from the instrument rather than through a microphone or amp. Recording a DI alongside your main tone means that tone can still be changed or replaced later, since the raw signal was kept.

Amp Simulator

Often shortened to "amp sim." Software or hardware that models the sound of a real guitar or bass amplifier and speaker cabinet. When recording direct, without a physical amp, an amp sim is what gives a guitar its character instead of sounding thin and harsh.

Gain Staging

Setting your recording levels so a signal is strong and clean without ever getting close to clipping. Good gain staging is one of the simplest things that makes a home recording sound noticeably more professional.

Intonation

Whether a stringed instrument stays in tune with itself as you move up the neck, not just when a string is played open. An instrument can read perfectly in tune open and still sound out of tune once chords are played higher up, if the intonation is off. That's a setup issue, adjusted at the bridge, not something a tuner alone can fix.

String Gauge

The thickness of a string, usually given in thousandths of an inch (for example .010 or .056). Heavier gauges hold pitch better under hard playing and in lower tunings, at the cost of being less comfortable to play.

Comping

Short for "compiling." Taking the best sections, phrases, or notes from several takes of a performance and combining them into one final, seamless take.

Punch-In

Recording over just a small section of an existing take, a bar, a phrase, a single note, rather than redoing the whole performance from the start.

Crossfade

A short, smooth transition between two audio regions, for example at a punch-in or an edit point, so the join is inaudible instead of an abrupt cut.

Phase

How two or more audio signals of the same sound line up in time. When multiple mics or signals of the same source aren't aligned, certain frequencies can cancel each other out, called phase cancellation, leaving the combined sound thinner than either signal alone.

Condenser Mic

A microphone type known for being detailed and sensitive, commonly used for vocals and acoustic instruments in a treated room. It needs power (phantom power) to operate, and tends to pick up more of the room than a dynamic mic, which is worth knowing when deciding where and how to record.

Sibilance

Harsh, hissy "s" and "sh" sounds in a vocal recording, caused by how those sounds interact with a microphone. Mic choice and positioning can reduce it at the source; it can also be tamed afterward with a dedicated processor called a de-esser.

3. Mixing & Mastering

Rough Mix

An unpolished, rough balance of a song, not the final version, used to give an engineer a sense of your intended direction: levels, panning, energy.

Reference Track

A finished song, usually by another artist, used as a sonic benchmark for tone, loudness, or vibe when describing what you're going for.

Master Bus

The final stage every track in a mix passes through on its way out, sometimes called the mix bus. Anything applied here, EQ, compression, limiting, affects the entire song at once, not just one instrument.

Limiter

A type of compressor that firmly caps a signal at a set ceiling, most commonly used to raise a track's overall loudness. It's a heavy-handed tool, so using one before sending a mix off, rather than leaving that decision to mastering, can lock in choices that are difficult to undo later.

Normalize

Automatically raising or lowering a file's level so its loudest peak hits a specific target. It's a blunt tool: normalizing a mix close to 0 dBFS before sending it off removes the headroom a mastering engineer needs, so it's best left alone.

Dither

A tiny, intentional amount of noise added when reducing bit depth, say from 24-bit down to 16-bit for a final release, to smooth out rounding errors that would otherwise sound harsh. This is normally the mastering engineer's job at the very last step, which is why you shouldn't dither a file yourself before sending it off.

4. Session & Workflow

BPM

Beats per minute: the tempo of a song. Knowing your BPM, and whether it changes throughout the song, helps an engineer set up a click track or align a tempo map to your recording.

Click Track

A steady metronome pulse played through headphones while recording, used to keep a performance locked to a consistent tempo, or grid.

Tempo Map

A file, or MIDI track, that records every tempo change throughout a song. Used whenever a track speeds up, slows down, or shifts time signature rather than staying at one fixed BPM.

MIDI

Short for Musical Instrument Digital Interface. Rather than being audio itself, a MIDI file stores performance information: which notes were played, when, and how hard. That's why a MIDI part can still be edited or have its sound changed after the fact, unlike a recorded audio take.

DAW

Short for Digital Audio Workstation, the software used to record, edit, and mix music. Logic Pro, Ableton Live, Pro Tools, and FL Studio are all examples.