# MIXING TECHNOLOGY AND EQUIPMENT

Even for the bedroom producers, it is still useful to know how a professional studio is laid out, and the basic equipment in it, in case we ever end up mixing in one.

## THE MIXING CONSOLE

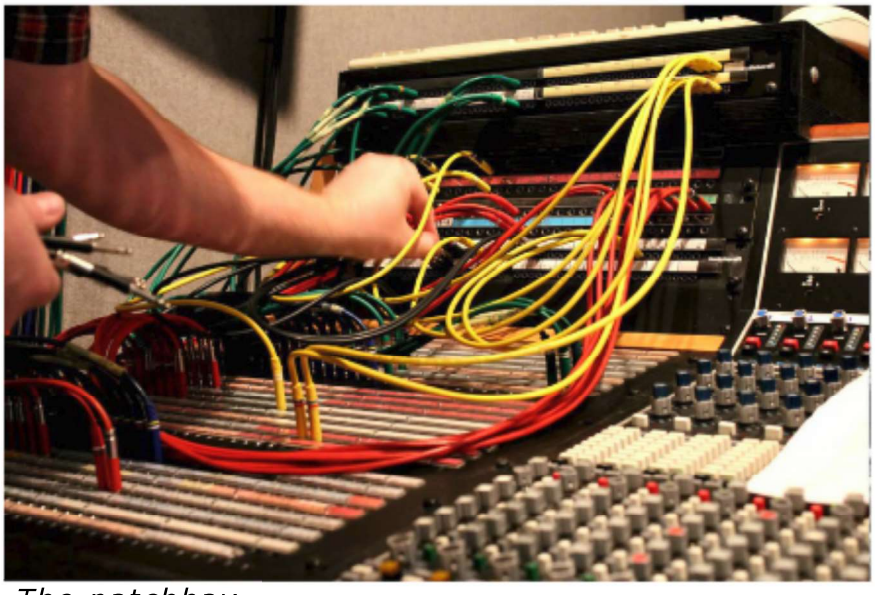
This is the hub of the studio, with everything connected to it. From here we will be performing most of our mixing duties. This is also where we will be summing our individual tracks down to one stereo audio file.

The mixing console can be used to send and return signals to different areas of the studio, such as effects rack and processors. We also have some controls built into the console such as EQ's, and sometimes compressors.

## THE PATCH BAY

This is how the mixing console is connected to all the equipment in the studio. Think of this as all of the wiring in the studio.

Rather than having to go into the back of the console, all of the wiring will go straight to the patch bay. Usually the patch bay will have hard wirings to the inputs and outputs of the soundcard and the console, as well as having routings to all of the effects and processing racks. This means that we can effectively route any channel, to and from anywhere, using the patch bay and one or two patch cables.



*The patchbay*

## OUTBOARD EQUIPMENT

Outboard equipment is external hardware, FX units or processors such as compressors, reverbs, and delays. These will commonly be mounted in racks and wired into our patch bay.

## THE DAW (DIGITAL AUDIO WORKSTATION)

This is a program on a computer that we are going to use to host our session electronically and save the files, so we can come back and work on our mix whenever we want, without the need to manually recall fader and knob settings.

**Popular DAW's are:**

- Ableton Live
- Logic Pro
- Cubase
- Pro-tools

The DAW is linked to the soundcard, which will feed the information back and forth from the console and the speakers. We want to make sure our soundcard has enough inputs and outputs to be able to utilize all the channels on the desk. We may also want backup hard drives for the computer, and in some cases we may also use external DSP hosting hardware to take the CPU strain off of our computer when dealing with a large amount of tracks.

## STUDIO MONITORS

We have already covered these in great detail, but these will usually comprise of two or three different sets of speakers, that will be wired into the console via a monitoring control box, which allows us to switch between set reference volumes, and different speakers.

## DIGITAL VERSUS ANALOG

Many top mix engineers that used to mix using analog hardware are now mixing completely in the box (ITB). This is thanks to the advancements in digital technology and the plethora of very accurate analog emulation plugins. (VST's and AU's.)

Mixing in the box is most likely how many of us will be mixing, due to the space and financial limitations of having our own hardware and a studio.
When mixing in the box we recommend fully researching plugins before buying them. Only buy them if we could really benefit from them. This will force us to learn a plugin inside and out, and know exactly how to get the best possible results out of it. Too many times we have seen producers either download massive bundles, or manage to find a cracked version of software, only for it to sit on their list of VST's never to be used, because they also have hundreds of other plugins that they haven't taken the time to learn. Half of which are unlikely to work properly anyway because they are cracked.

Whilst many producers use cracked software, we highly recommend purchasing the licenses properly. This helps support the companies that develop and create the VSTs, as well as protect the producer/mix-engineer from any potential legal implications due to making money from productions whilst using cracked software. This also means we will stay up to date with any new versions and bug fixes.

Many older producers however, still prefer to mix in an analog style because much of the old equipment, such as the SSL desks give sounds a warmer colour due to the analog circuitry & analog summing. Digital signals tend to sound colder and less vibrant than analog.

## MIXING TECHNOLOGY AND EQUIPMENT SUMMARY & KEY POINTS

- A patch bay is used to send signals around a studio, to and from different hardware or locations
- Outboard equipment is external hardware, effects units or processors
- DAW stands for digital audio workstation; Ableton live, Logic Pro, Pro-tools and Cubase are the main competitors
- VSTs and AUs are software instruments and FX; These can emulate outboard gear from within the software (in the box)
- Many producers prefer the characteristics that analogue hardware can impart on a sound
- It's better to build up a collection of legitimate VSTs slowly, rather than resorting to downloading cracked versions that don't work correctly