If you've been following this series, you'll know that in the previous issue, we concluded our look at the basic components of an average synthesizer. Well... now what? Umm.. FUN, that's what! Starting with this issue we are going to look at a variety of practical applications for everyone from synthophobes to synthophiles. Today we will be looking at a couple of tricks for studio-jockeys. Specifically, some recording studio applications for modular synths that don't require you to 'play' keyboards! Modular synths by definition, have a more relaxed configuration of their components than other machines. While this gives you the freedom to interface with the outside world, it also requires you to know HOW to connect it with the outside world.

By far, one of the most popular things to do with a modular synth these days (or certain non-modular analog synths, or stand-alone filter units) is to use it's filter(s) to process an external audio signal. If you use your computer for recording, you may have used a software plug-in that simulates this effect. Many of these plug-ins are quite good, but many people think they still lack that fundamental 'grit' in tone that can only come from a real live analog filter. There is also an element of random happenstance in the real thing that I'm at a loss to describe cogently.

Setting up is fairly simple and involves routing some kind of audio signal to the synth's filter input jack and then passing on the synth's output to the mixer console or amplifier. That's about it really. Depending upon what synth you're using, you will of course have different controls at your disposal to tailor the resulting sound. If for instance you have decided to process a drum machine through the filter, then you will be able to filter out the high or low frequencies, depending upon whether you have a LPF (low-pass filter) or HPF (high-pass filter). Playing with the filter's resonance or 'Q' can elicit some great results by accentuating certain frequencies in the original signal. You can actually 'tune' the filter using the frequency cutoff control to a dominant frequency present in the signal. If your ear is good, you might be able to tune the resonant point of the filter to say, a major third above the perceived 'note' that the kick drum is sounding. Remember, different filters differ sonically in quality much like guitar amps.

On some synths you may be able to overdrive the filter input. BE CAREFUL. Too much signal and you may damage it. That's journalistic jargon for "I've never personally had a problem here, but maybe I don't know your machine very well or at all, nor how predisposed you are to spontaneous combustion or spontaneous litigation". Anyway, overdriving a filter input somewhat, or pre-overdriving it with an external effect device first can REALLY beef up the sound. By doing so, you can introduce a wider array of initial frequencies to filter out. It's also an incredibly satisfying sound. Now, start cranking up the resonance and wait for it to start howling. If you're lucky, you can leave the sound hanging just on "the edge", such that the howling of the resonance feeding back only occurs during certain parts of the sound. Very effective. Once you've found something you like, RECORD IT! You may never get it back to quite the way you really liked it. After that try some experimenting, for example, try patching in an LFO to vary the filter's cutoff frequency.

Another fantastic studio trick is using certain synths as a trigger extractor. The classic Korg MS-20 semi-modular synth has a section on it's control panel labelled "External Signal Processor"(ESP). This is a godsend for studio use. It allows you to plug in any audio source signal and convert it into various types of useful control voltage information. It includes trigger extraction, envelope out, and control-voltage out. Briefly, 'envelope out' sends out a control signal that mimics the overall 'shape' of the input signal's volume. Control-voltage out converts the predominant frequency in the input signal to a usable control voltage to control for example, oscillator pitch. A very handy thing if you ever want to play your synth from your guitar, or a trumpet. However, the trigger extractor is the topic at hand, and what it does is create a voltage trigger whenever the input source signal is louder than a user-determined threshold. So how is this useful? Well, say you've recorded some drum tracks and it all works well but the snare drum track is sort of wimpy sounding. Isolate the snare to an auxillary output and route it to the MS-20's ESP input. By patching the resulting extracted trigger output to a trigger input on an electronic drum brain, you can effectively replace the old snare with new one.

This same trigger signal could be even sent back into the synth at another patch point. For instance, you could send it to the trigger input of one of the synth's envelopes to trigger a filter sweep. Set the threshold level correctly and it will only make the sound on the loudest hits. Once you have both the original audio signal and the resulting extracted control signals available to you, the world is your oyster and you can come up with some really crazy effects just by experimenting and interfacing with other devices. Effects that are perfectly synced up to whatever your source material is. Very fun.

Next issue, even MORE synth tricks to boggle and astound... or is that toggle and resound?

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