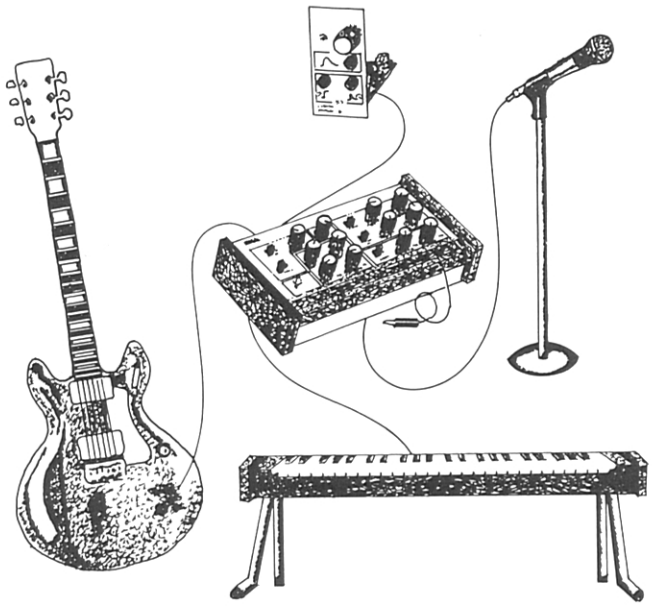
Interfacing External Signals with the Gnome Micro-Synthesizer



Many people are interested in low cost methods of processing signals from standard musical instruments, microphones or recorded signals. As well as serving as a low cost introduction to the principles of synthesizers, the Gnome can easily be modified to become a versatile processing center for external signals. Here are some ways to accomplish this type of interface, each suited to slightly different circumstances. Perhaps you' ll find one here that is just what you' ve been looking for.

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Guitar/Gnome Interface

—— by: Craig Anderton ——

This circuit serves as an automatic trigger for the GNOME. A suitable jack for an external signal input can be mounted on the rear panel. The external signal is applied to a 1 meg sensitivity control which can also be mounted on the rear panel. The first stage of the LM3900 is a high gain audio amp. The output from this stage is then fed to a rectifier built around the second amp of the IC. The rectified signal is filtered by the 47K/. 22 mfd. combination. The voltage across this capacitor is present only when an input signal is present. Thus, the comparator output is connected to the point which will cause both of the Gnome's envelope generators to begin sweeping. In other words, the applied external signal will produce the same effect as pressing the trigger button. The original input signal is simultaneously applied to one side of a SPDT switch mounted on the GNOME case. The positive side of C2 in the Gnome is lifted from the circuit board, and an extention wire connects it to the wiper of the switch. The remaining side of the switch is connected by a wire to the unused positive mounting hole for C2. This switch will allow the user to select noise generation or external signal generation.

Another nice feature of this circuit is that your external signal will now use the noise circuitry as a preamp and level control. The complete schematic is shown here and all parts are standard and easily obtained.