

(((PYRAMID SYNTHESISER INSTRUCTIONS)))

The pyramid synth contains a Sound Lab mark II, built from a PCB supplied by Music From Outer Space. Full documentation and schematics can be found at www.musicfromouterspace.com. It's really worth a visit to help get the most out of your synthesiser, but I'll try and cover some of the basics on this page just to get started.

Panel layout

Each function of the synth has been divided into two areas - a group of knobs, and their corresponding switches and sockets. The knobs have been enclosed within a border to help show what they do, and the switches have a bracket and heading above them.

Knobs arranged in groups from the top to bottom of the control panel correspond with the groups of switches arranged left to right along the bottom of the panel. For example, VCO1 has 3 knobs contained within a border at the very top of the panel, and the corresponding switches can be found in the lower left corner.

The drawing on this page shows the input sockets as white circles, output sockets as containing a black dot.

KBD sockets

The KBD CV in and Gate in sockets can accept a signal from a control voltage keyboard, ribbon controller, sequencer, theremin etc, to control the VCOs, VCF and envelope generators.

Voltage Controlled Oscillators

Frequency adjusts the pitch of the oscillators, pulsewidth adjusts the duty cycle of the square wave when the VCO waveshape is switched to square. "Duty cycle" just means the width of the square wave's positive excursion compared to negative, 50% duty cycle being a symmetrical square wave.

Notice some of the switches have a "centre off" position. Each VCO can be modulated by a number of sources - moving a centre off switch away from its central position determine which source is selected: keyboard, envelope generator, LFO or sample and hold.

The Sync VCO2 switch synchronises VCO1 to VCO2. The sync out socket on VCO2 can be used to sync to other synthesiser VCOs.

Audio Mixer

This section controls the volume level of the VCOs, as well as white noise and an external input. Plug a drum machine or whatever you'd like into the external input socket, and you can process the signal with the filter, LFO, phaser etc.

Voltage Controlled Filter

The filter has 2 modes, bandpass or lowpass. The KBD switch allows the VCF to be modulated by a CV input in the KBD CV IN socket. The VCF CV in socket can accept an input from an envelope generator, LFO, S&H, sequencer or other CV source.

Turning the resonance knob all the way up will cause the filter to self-oscillate. The LFO MOD knob sets the amount that the LFO affects the VCF. The EG 1 MOD knob sets the amount that envelope generator no. 1 affects the VCF.

Voltage Controlled Amplifier

The VCA can be modulated by EG 2 (the 2nd envelope generator), by VCO1 or by the LFO. The EG 2 MOD knob sets the amount that EG 2 affects the VCA, the MOD AMOUNT knob sets the amount that either VCO1 or the LFO affects the VCA. The modulation source for this is set by the switch.

Envelope Generators

These are fairly self explanatory, the only unusual feature being the "repeat" function. When this is turned on, the envelope re-triggers at the frequency set by the "repeat rate" knob. There is also the option of re-triggering the envelope at the same rate as the sample & hold rate. Again, "centre off" switches are used to select modulation routing.

Sample and Hold

Connect the noise source or LFO etc. into the input, and the CV output into the KBD or phaser CV input socket, and adjust bleeps according to taste.

Low Frequency Oscillator

Handy for making things wobbly.

Phaser

Yes, a built in 8-stage Music From Outer Space phaser - hooray! Switch controls whether synth is fed through phaser, or plugging an external signal into IN will override the synth.

I've written about some of these features in slightly more depth here: www.nervoussquirrel.com/modular.html

Again, it would be well worth checking out the MFOS website at some point, even though it is a bit of a tricky site to navigate. Although you will be able to get sounds out of the pyramid synth via experimentation, without some reading it will be a little like poking a violin with a stick. Experimentation obviously encouraged too!

MIDI control if needed

A MIDI to CV / gate converter will allow the pyramid to be interfaced with a laptop if necessary. The VCOs actually have temperature compensating components to keep them very stable, and they can be used over a wide frequency range, so can be controlled by modern equipment with satisfying results.

(Note: A Novation Bass Station rack unit has a good MIDI to CV converter built in, and often costs considerably less than a dedicated converter, plus you get a bonus monosynth rack unit)

Please get in touch if you have any questions:

dave@nervoussquirrel.com

