

The U KNOW 007



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Overview / Basics

The **U KNOW 007** features a **pulse oscillator**, a **sawtooth oscillator**, a **square-wave suboscillator** and a **noise generator**. A **high-pass filter**, a **resonant low-pass filter**, a **stereo chorus** and an appropriate assortment of **envelopes** and **LFOs** round out the picture.

Do you think **U KNOW** where you've seen this one before?

Here are a few basic points to help with the quick start:

The **Main Volume** control (VOL) is squeezed in at the far right end of the synth, about halfway up the panel.

The **MIDI Channel** can be dialed in via a text fader window which is found in the upper right-hand corner of the Pitch Control section (or at any rate, that's where it was the last time we looked).

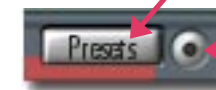
Buttons for opening the **Preset List** and for **minimizing** the synth control surface to an icon are located in the upper right-hand corner of the synth surface.



Main volume



MIDI channel



Open Preset List

Minimize to icon

Tune / Oscillators / Noise Generator

The oscillator section has a **variable-width pulse oscillator** and a **sawtooth oscillator**. There is also a **square-wave suboscillator** whose pitch is always one octave below that of the other two, and a **noise generator**.

Tune Section

The buttons **4'-8'-16'** select the octave range for all three oscillators. The **SPREAD** control "spreads" note pitches apart from each other just slightly to mimic that classic not-quite-perfect tuning (full left rotation = no spread).

The pulse and sawtooth oscillators have separate **PHASE** controls with an associated **LFO/MAN** switch.

When the switch is in the **MAN** (manual) position, each Phase control **directly** adjusts the phase of its respective oscillator. In this mode, the phase is a static setting which does not change over time.

In **LFO** mode, the Phase controls adjust the **amount of (main) LFO modulation** applied to oscillator phase.

Although LFO-driven phase modulation of a single oscillator can produce an audible effect similar to vibrato, **the Phase features are intended for use with both oscillators switched on**, since the interesting phase effects are produced by the static or dynamic phase relationships *between* the two oscillators.



Oscillator Section

The white buttons at center **switch the pulse and sawtooth oscillators on and off** separately. The knobs directly below these buttons are the **oscillator level controls**. The faders further to the right are the **suboscillator and noise generator level controls**. With this set of controls, the levels of all four signal sources can be mixed with full flexibility.

At left are the **pulse-width controls** for the pulse oscillator.

When the switch is in the **LFO** position, the pulse width is modulated by the main LFO, with modulation depth set by the **LFO** fader. In this mode the PWM fader has no effect.

If **MAN** is selected, the **PWM** fader lets you manually set a fixed pulse width. In this mode the LFO fader has no effect.



Main LFO

The main LFO can be used to modulate **amplitude**, **filter cutoff**, **pan position**, the **phase** of both oscillators and the **pulse width** of the pulse oscillator.

The **WAVE** slider offers a choice of six different LFO waveforms (sine, square, sawtooth up, sawtooth down, and random).

The **RATE** fader controls LFO speed.

The **Ret** (retrigger) button provides the option of resetting the LFO to the starting point in its waveform on each new note, instead of allowing it to continuously free-run.

The **DEL** (delay) fader permits adjustment of the delay and "ramp-up" (fade-in) time of the main LFO which begins when a note is played. At the minimum setting, the LFO comes on virtually instantly. At higher settings, both the delay and the ramp-up are gradually extended.



Pitch Control

The graphical **Mod Wheel** (MW) is an onscreen working model of the real thing, which indirectly affects oscillator pitch via a dedicated pitch-mod LFO. The Mod Wheel controls the output level of this LFO. The **MD** (mod depth) fader adjusts the range of this modulation, while the **RATE** fader adjusts the LFO speed.

MIDI Mod Wheel (controller #1) messages are assigned to the onscreen Mod Wheel and produce the same effect as the onscreen controller. In addition, **the onscreen controller moves by itself** in response to received MIDI Mod Wheel messages (provided, of course, that they are coming in on the selected MIDI channel).

The **PWR** (Pitch Wheel Range) slider sets the range of response to MIDI Pitch Bend messages in semitone steps, up to a maximum pitch-bend range of 12 semitones (one octave) up/down.

The **PORTA** (Portamento) section includes an on/off switch for enabling/disabling portamento and a knob which adjusts portamento speed.

Also located in this section is the familiar **MIDI channel select** text fader.



Set MIDI channel

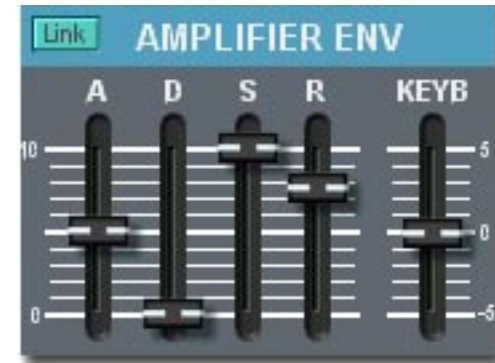
Amp Control

Amplifier Envelope Section

The Amp Envelope is a simple ADSR (with corresponding controls **A/D/S/R**) which affects the two oscillators and the suboscillator in common.

The **KEYB** fader adjusts the effect of keyboard position on envelope times (attack, decay, release). Positive settings produce longer times as you go up the keyboard, while negative settings produce the opposite result.

The **Link** switch at upper left in this section links the filter envelope settings to those of the amp envelope. When the switch is initially turned on, the current amp envelope settings are applied to the filter envelope. Thereafter, for as long as the switch remains on, the two envelopes are linked together, so that adjustments to the settings of either envelope are applied instantly to both envelopes.



Amplifier Section

The **VEL** fader controls amplifier response to note velocity.

The **LFO** fader sets the amount of amp modulation produced by the main LFO.

The **PAN LFO** fader sets the amount of pan modulation produced by the main LFO.



Filter

The U KNOW 007 filter section includes a resonant low-pass filter and a separate non-resonant high-pass filter (**HPF**). Each of the filters has its own **FREQ** (frequency) control.

The **RES** fader controls filter resonance or sharpness for the low-pass filter.

The RES control as well as the filter modulation sources described below **affect only the low-pass filter**.

The low-pass filter cutoff frequency set by the FREQ fader can be modified via four different **modulation sources**, each with its own fader to control modulation amount: **ENV** (filter envelope), **LFO** (main LFO), **VEL** (note-on velocity) and **KEYB** (keyboard position or note number).

The switch next to the ENV fader permits the **polarity of envelope modulation to be inverted**, so that the filter envelope causes the filter to close down during the attack phase and then reopen during decay and release phases.

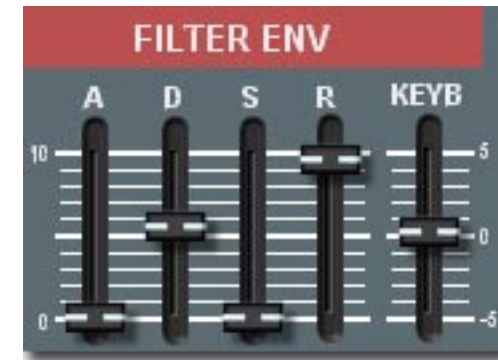
The **KEYB** fader controls the tracking of filter cutoff against keyboard position (note number). At the maximum setting, filter cutoff tracks base oscillator (note) pitch more or less exactly. At the minimum setting, it is unaffected by keyboard position. Intermediate settings produce tracking amounts between these extremes.



The **Filter Envelope** is a simple ADSR (with corresponding controls **A/D/S/R**) which **affects *only* the low-pass filter**.

The **KEYB** fader adjusts the effect of keyboard position on envelope times (attack, decay, release). Positive settings produce longer times as you go up the keyboard, while negative settings produce the opposite result.

The **Link** switch at upper left in the Amp Envelope section links the filter envelope settings to those of the amp envelope. When the switch is initially turned on, the current amp envelope settings are applied to the filter envelope. Thereafter, for as long as the switch remains on, the two envelopes are linked together, so that adjustments to the settings of either envelope are applied instantly to both envelopes.



Chorus

The chorus effect makes the sound of the U KNOW 007 more lush and "fat" and produces a stereo output from the otherwise monaural synth signal.

The **blue button** switches the chorus on and off. **RATE** controls the speed of the chorus modulation LFO, while **DEPTH** sets the amount of modulation (delay sweep) produced by the LFO.



Connections



Project window (module) representation



Minimized (icon) representation