

SDS_VCO_DRUMS

Alternate Firmware User's Manual

I. Introduction

This is an alternate firmware to the original VCO firmware that comes with your SDS_VCO that turns it into a 16 drum percussion module. This Firmware will replace the VCO firmware so make sure you have also downloaded a copy of the latest original VCO firmware in case you want to go back to it in the future.

The SDS_VCO_Drums is very different from the VCO in that the controls terminology no longer is true. The Attack and Decay knobs are no longer these, but the Release controls the length of a drum so is similar. The WAV knob selects the drums like the VCO selected waveforms so it's easy to remember. The LED's still light in the same way, but there are virtually no "Wiggle Settings" in this firmware.

As this module is now a trigger-based module, there is a slight delay (2mS) to ensure slower modules have their CV in order before the trigger reads it and turns it into a drum selection.

II. Changing Firmware Instructions

- 1 Make sure the power has been on for longer than 12 seconds *You may inadvertently enter Calibration Mode otherwise!!
- 2 Download the Firmware MP3 you want (above) ready to play
- 3 Make sure there will be no interruptions to playing the file:
 - If using a mobile device (iPhone etc) make sure it is in "Airplane Mode"
 - Turn off any EQ or surround sound settings on your audio card / system / player
 - Turn up the player's volume to near maximum
- 4 Use a standard 3.5mm patch cord to connect to the CV input (top jack)
- 5 Select WAV #0 (All LEDs off) and wiggle ATtack knob on it, then:
- 6 *IMMEDIATELY* Play the entire mp3 file before the 8 second time-out *The LED's will "count down" to indicate the time you have left to start playing the file.
If you're too late, the SDS_VCO will do a reset. You will need to wait 12 seconds before trying again.
- 7 The LED's will dance around for about 1 minute 30 seconds, then the splash will occur.
If this doesn't happen, then check your connection and try again (after 12 seconds!)

III. Trig/Gate Input

The T/G Input acts more as a trigger. A low to High transition on this jack will trigger the selected drum. Because some sequencers are a bit slow in getting the CV to a proper level before they send the trigger, there is a delay of 6mS by default. This can be changed between 0 mS and 8 mS.

Adjust the Delay:

To change the CV delay "Wiggle" the ATtack knob on LED #2. The LED's will flash. Adjust the ATtack knob from no LED's to 15 which will set 0 to 15 mS respectively. If you have this info on your sequencer, adjust slightly above the specification. If there is no information on your sequencer, start with 8mS and work downward. After 6 seconds of no movement the setting will be saved.
*If using with a MIDI/CV/MIDI and computer soundcard, it'll be accurate to set to the card's latency!

IV. MOD Input

The MOD input has become the Drum Selector offset to the WAV knob. Note that this is bi-polar +/-5V by default. This means the entire range of drums can only be accessed with +/- 5V.

Uni-Polar MOD:

To Permanently Change MOD input to a uni-polar (0-5V) full range, "Wiggle" the ATtack knob on LED#1 and once the LEDs Flash, adjust the ATtack knob right to turn on the +8 LED. Adjusting the knob left will return the MOD input to Bi-Polar mode. After 6 seconds of no movement the setting will be saved.

V. CV Input

The CV Input will alter the present drum playing. This will offset the ATtack or DeCaY knob in a uni-polar direction only (0-5V) but if the total value becomes greater than the maximum setting of the ATK/DCY knobs it will roll around. See VI. Drum Adjustments Chart below for what in each drum is affected by the CV input. Keep in mind this CV will have an affect on any drum playing at the time. This is not a permanent modifier.

The Toms, Glitch, Variable Snare, sounds can be modulated up to 60 Hz or so using an LFO (as opposed to started frequency of other drums) so an LFO gated to the CV in during these drums can yield interesting results.

VI. Drum Adjustments Chart

# / DRUM	ATtack	DeCaY	RELease	CV IN Affects:
#0 Pure Kick	Start Frequency	Level	Length	DCY+ (Level)
#1 Frogger Kick	Start Frequency	Frog Amount	Length	ATK+ (Start Frequency)
#2 Power Kick	Start Frequency	Distortion Level	Length	ATK+ (Start Frequency)
#3 Noise Snare	Low Pass/Freq	Tone Ring Level	Length	ATK+ (Start Frequency)
#4 Tick Snare	Frequency	Phase Mix	Length	REL+ (Length)
#5 Var. Snare	Frequency	Wave Slide Select	Length	DCY+ (WaveSlideSelect)
#6 Low Tom	Frequency Range	Damping(CW=Open)	Length	ATK+ (Frequency)
#7 Mid Fuzz Tom	Frequency Range	Damping(CW=Open)	Length	ATK+ (Frequency)
#8 High Fuzz Tom	Frequency Range	Damping(CW=Open)	Length	ATK+ (Frequency)
#1+8 High Hat	Frequency Fizz	FX/Mix with ATK	Length	None
#2+8 Crash Cymbal	Frequency/Depth	Harmonics	Length	None
#3+8 Splash Cymb.	Frequency Ring	Harmonics	Length	None
#4+8 Belly Bell	Frequency @ T/G	Damping(CW=Open)	Length	ATK+ (Frequency)
#5+8 Cowbellish	Frequency @ T/G	Damping(CW=Open)	Len/Vibr.	ATK+ (Frequency)
#6+8 Table Ruler	Ruler Length/Freq	Looseness, Ramp	Length	ATK+ (Frequency)
#7+8 Glitch Bell	Frequency	Bell Tone Select	Length	DCY+ (Bell Tone) ATK+ (Freq)

*Note: If a single drum is being adjusted, it isn't saved until another drum is selected by the WAV knob.

Adjustment Auto-Save:

In order to hear drums, a trigger/Gate must be patched in. This allows you to hear the selected drum and adjust it's properties. To permanently save the adjustments, dial the WAV to select a different drum. All of the LEDs will flash to indicate it has been saved.

Adjustments during a Sequence Playing:

Any of the top 3 knobs adjusted during play will affect the drum that happens to be playing at the time. There is a guard in place to stop a permanent save in case a knob is bumped. 3 seconds after there is no Trig/Gate input, the originally saved values will all re-load.

It's still best not to move these will sequencing though if you want to maintain the offset drums settings (the drum selected when the gate/trigger stops) as it "may" be changed due to a slight change in the knob's position.

VII. MIDI Implementation

If you have the SDS_VCO MIDI expansion, then this section is for you!

As this is now a drum module, naturally the MIDI output is on channel 10 and the MIDI outputs will approximate the GM MIDI Drum set. While the sounds the SDS_VCO is making can vary drastically, the classification is the same (i.e. Kick will route to a kick, Snare will route to a snare etc)
Below is a MIDI "note" chart of all of the drums and what they will send when triggered.

DRUM # / DESC	GM MIDI NOTE ON CHANNEL 10
#0 Pure Kick	#35 Acoustic Bass Drum
#1 Frogger Kick	#36 Bass Drum 1
#2 Power Kick	#41 Low Floor Tom
#3 Noise Snare	#38 Acoustic Snare
#4 Tick Snare	#40 Electric Snare
#5 Var. Snare	#37 Side Stick
#6 Low Tom	#45 Low Tom
#7 Mid Fuzz Tom	#48 Hi Mid Tom
#8 High Soft Tom	#50 High Tom
#1+8 High Hat	#42 Closed Hi Hat
#2+8 Crash Cymbal	#49 Crash Cymbal 1
#3+8 Splash Cymb.	#51 Ride Cymbal 1
#4+8 Belly Bell	#67 High Agogo
#5+8 Cowbellish	#56 Cowbell
#6+8 Table Ruler	#74 Long Guiro
#7+8 Glitch Bell	#81 Open Triangle