Dear customer,

Thank you for your purchase of the MODSEQ eurorack module.

The MODSEQ is a low cost, low HP, 8 step auxiliary sequencer. As the name implies its primary duty is for modulation, however it will function perfectly well as a note sequencer.

Since the MODSEQ has only 4 knobs but 8 steps, steps 5-8 share the knobs of steps 1-4 but in a mirrored fashion. The result of this is somewhat akin to a sample and hold circuit but programmable rather than random.

Read on to get the best out of your new module and be sure to check out the patch examples.

Your new module comes with 12 months free technical support for the original purchaser, just drop an email to info@dinsync.info if you have any questions or problems.

Again thank you for your purchase, it's much appreciated. And don't forget to keep an eye on http://www.dinsync.info for the forthcoming modules.

Paul

Who reads manuals anyway?

I know right? but please take a quick read of the following.

Installation

The MODSEQ has reverse power protection, so plugging the power cable in backwards should result in no damage to the module itself. However plugging things in backwards is never a good idea and could potentially damage other parts of your system. The protection is there in case of plugging the power cable in backwards by accident, please still take care to check the orientation of the cable when connecting it for the first time.
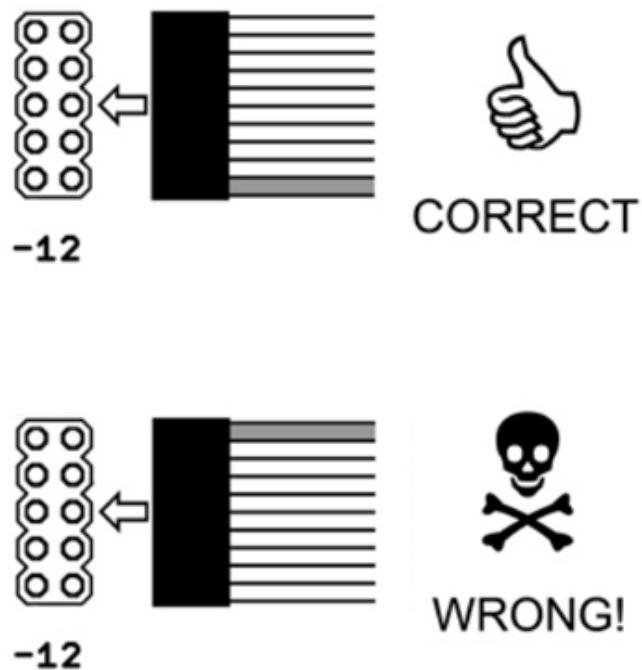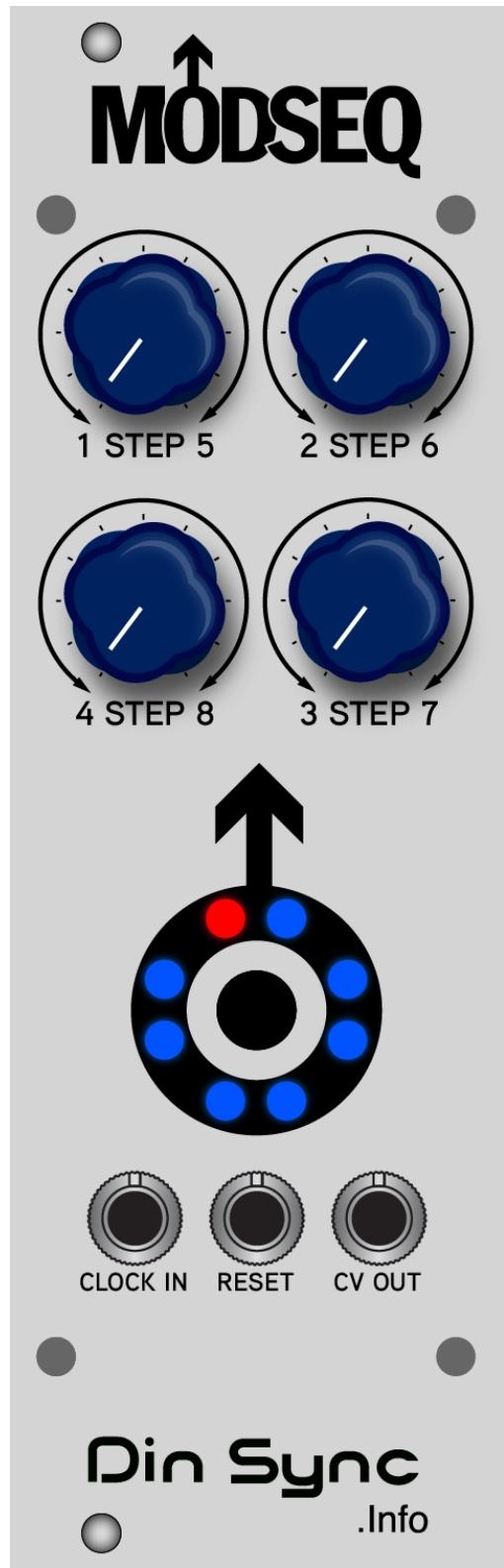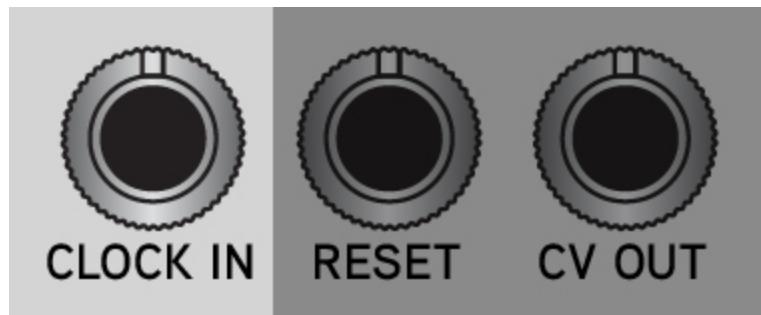

figure 1 - the correct and wrong way to connect power

Before installing please power off your modular case. Connect one end of the cable to the module as shown in **figure 1.** Connect the other end of the cable to your modular case bus board, please check your case's manual for the correct orientation. The stripe on the cable should be connected to -12. We have now started using keyed connectors on our power cables. If you have a busboard with a shrouded header please confirm that the red stripe is at -12v before powering your system. After you have connected the power you can mount the module using the included screws, the MODSEQ requires 8HP of cabinet space.

MODSEQ

1 STEP 5   2 STEP 6

4 STEP 8   3 STEP 7

CLOCK IN   RESET   CV OUT

Din Sync
.Info

USAGE

The MODSEQ requires an external clock to function, you can use a dedicated clock module such as the ProModular CLOQ (or equivalent) a standard gate, a square wave LFO or an output from a clock divider.
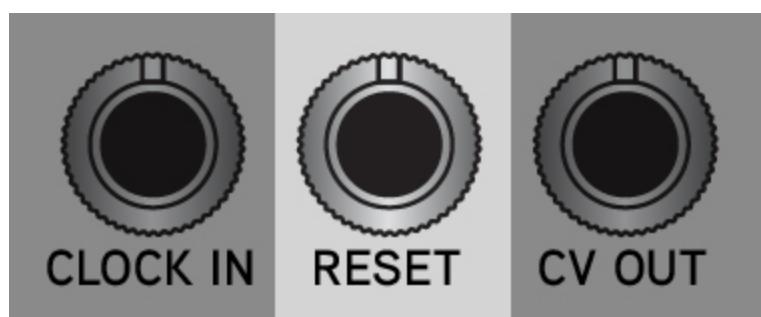

CLOCK IN

Connect your clock signal to this jack, ideally your clock signal would be a square pulse with a minimum voltage of 1.5v
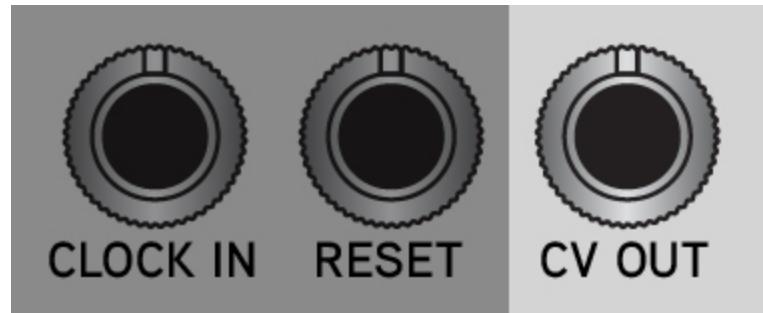
Waveforms such as triangles, sines or for example pressure points pressure outs are not suitable for clocking and will cause steps to skip.

(tip: if you want to use pressure points to manually trigger the MODSEQ, use the touch gate out)

RESET

Connect your reset signal to this jack, the reset jack requires a minimum voltage of 1.5v to activate.
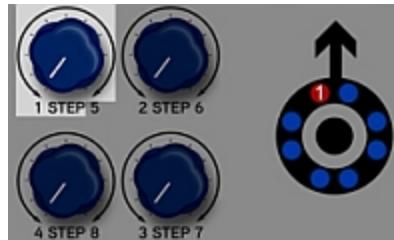
CV OUT

Connect this buffered output to the device you wish to modulate.

(tip: setting a filter to self oscillation and connecting the MODSEQ CV OUT to the filters cutoff cv input makes for a nice sample and hold like effect)
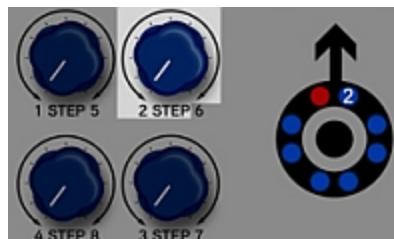
There's 8 steps but only 4 knobs!?!

In order to get 8 steps with 4 knobs the MODSEQ uses each knob to set the voltage for two steps. The first four steps are 0-5v clockwise and the last four steps are 0-5v counter clockwise. If that sounds confusing see the charts on the following pages. It'll make sense then.

Step 1

The (**1 STEP** 5) knob range is 0-5v
When step one is active and the knob is turned all the way to the left the voltage at CV OUT is 0v. Turning the knob to the right increases the voltage up to 5v at the far right position.

Step 2

The (**2 STEP** 6) knob range is 0-5v
When step two is active and the knob is turned all the way to the left the voltage at CV OUT is 0v. Turning the knob to the right increases the voltage up to 5v at the far right position.

Step 3

The (**3 STEP** 7) knob range is 0-5v
When step three is active and the knob is turned all the way to the left the voltage at CV OUT is 0v. Turning the knob to the right increases the voltage up to 5v at the far right position.
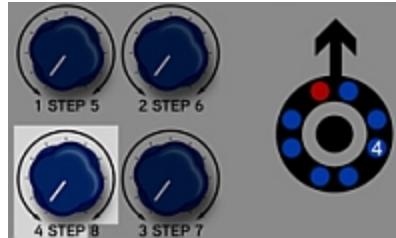
Step 4

The (**4 STEP** 8) knob range is 0-5v
When step four is active and the knob is turned all the way to the left the voltage at CV OUT is 0v. Turning the knob to the right increases the voltage up to 5v at the far right position.

Step 5

The (1 **STEP 5**) knob range is 5-0v

When step five is active and the knob is turned all the way to the left the voltage at CV OUT is 5v. Turning the knob to the right decreases the voltage at CV OUT, down to 0v at the far right position.

Step 6

The (2 **STEP 6**) knob range is 5-0v

When step six is active and the knob is turned all the way to the left the voltage at CV OUT is 5v. Turning the knob to the right decreases the voltage at CV OUT, down to 0v at the far right position.

Step 7

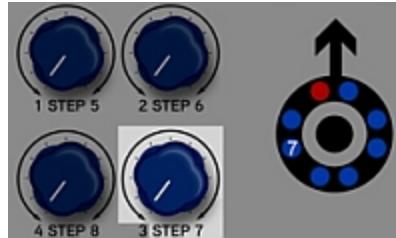The (3 **STEP 7**) knob range is 5-0v

When step seven is active and the knob is turned all the way to the left the voltage at CV OUT is 5v. Turning the knob to the right decreases the voltage at CV OUT, down to 0v at the far right position.

Step 8

The (4 **STEP 8**) knob range is 5-0v

When step eight is active and the knob is turned all the way to the left the voltage at CV OUT is 5v. Turning the knob to the right decreases the voltage at CV OUT, down to 0v at the far right position.

Patch Examples

Programmable Sample and Hold

This is the most basic use of the MODSEQ.

Connect a clock to CLOCK IN
Use a filter capable of self oscillation, something such as the Manhattan Analog MA35 is great for this.
Set the filter to self oscillate and connect the MODSEQ CV OUT to the filters cutoff cv input.
Adjust the filter cutoff and MODSEQ step knobs to taste.

4 Step Note Sequencer

Mult your master clock to the MODSEQ CLOCK IN and a clock divider clock input.
Connect the /4 output of the clock divider to the MODSEQ RESET.
You will now have a basic four step sequencer perfect for oscillators, optionally you could connect a quantizer between the MODSEQ and your favorite oscillator.

Cascading MODSEQs

If you have more than one MODSEQ and a bi-directional sequential switch (or two) and a clock divider you can cascade them.

If you have two sequential switches, setup your patch like this

The first sequential switch should be set as 1 in and X out (where X is the number of MODSEQs) this part will be switching the clock between the MODSEQs

Mult your clock to the first sequential switch and clock divider clock inputs.
Connect the first sequential switch output 1 to the first MODSEQ, connect the first sequential switch output 2 to the second MODSEQ (repeat up to the maximum switch outputs and MODSEQs you have in your system)

The second sequential switch will be switching the MODSEQ outputs and so should be set as X in and 1 out (where X is the number of MODSEQs)

Connect the MODSEQ outputs to the switch and the single output of the switch to the module you wish to modulate.

Mult the /8 division of the clock divider to all the RESET jacks of the MODSEQs and the trigger of both sequential switches. If you miss this step and depending on which switch used you may find an extra step is triggered, using the reset keeps everything locked nice and tight.

When you run this patch each MODSEQ will only get a clock when its running for a nice visual effect.

You can see an example of 4 cascaded MODSEQs towards the end of this video.

http://www.youtube.com/watch?v=aA2YML6T4NQ

If you have one bi-directional sequential switch, setup your patch like this

Mult your clock to all MODSEQs and the clock divider
Connect the MODSEQ outputs to the switch and the single output of the switch to the module you wish to modulate.
Mult the /8 division of the clock divider to the trigger of the sequential switch.

In this case all MODSEQs will be running and the switch will change the outputs.

MODSEQ as an LFO/Oscillator

You can clock the MODSEQ at audiorates with a fast squarewave and adjust the knobs to make different waveshapes. While at audiorate the timing isn't very accurate, it can still be a lot of fun to try!

Paranormal Patroller's Paranormal Drums.

Mult a clock to the MODSEQ CLOCK IN and a 4MS Rotating Clock Divider,
Connect RCD output /8 to MODSEQ CV IN,
Connect MODSEQ CV OUT to RCD Rotate in
Patch RCD outputs to DrumDokta's inputs and twist the MODSEQ knobs.

Try connecting the MODSEQ CLOCK IN to other divisions from the RCD for a twist on this patch.

FAQ

Q: When I first power up the MODSEQ a random amount of LEDs are lit.
A: This is perfectly normal when the CMOS is powered up, sending a clock pulse or reset pulse will initialise the unit.

Q: Sometimes some steps skip.
A: This only happens when using non standard waveforms for clocking, you need to use a square wave to clock the MODSEQ. Either a dedicated clocking module or a squarewave LFO.

Acknowledgements

many thanks go out to

Stephen Kwartler from http://www.pro-modular.com for the panel design.

Chris "Infradead" Lehfeldt for beta testing.

Specifications

Width 8 HP

Depth 20 mm (measured from the rear of the faceplate) 29mm to the edge of the supplied and connected power cable.

Power consumption: ~10 mA (<6mA +12, <4mA -12)