

## The Sister Card

Hi

Thank you very much and congrats for purchasing the Sister Card.  
You'll definitely enjoy how it expands your Synthi.

### Features

#### 2 identical LFOs

Bipolar signal  
Square output  
Triangle output  
Variable shape of both waveforms / fine tune  
Hi/lo range switch  
Lowest frequency : +/- 25 seconds cycle  
Highest frequency : +/- 90Hz  
Frequency LED

#### Sample & hold

Clocked by either LFO (3 position switch 1 - off - 2)  
Sample input via the meter column  
Slew limiter with rate pot and lin/log response switch  
Normal CV output  
Slewed CV output  
Clock LED

#### 2 identical CV modulation busses

Individual level pot for each output of the LFO's and S&H  
Left bus CV routed to input channel 1  
Right bus CV routed to input channel 2  
Mixed output CV inverter switch  
Level LED

#### 2 attenuverter pins

Scale and invert signal

#### Gate output

Fires the Synthi's envelope generator by either LFO (3 position switch 1 - off - 2)

#### Handle support

Small plates can be mounted to the back to lock the Spartanite case's handle for better stability.

## How to use the Sister Card

With the Synthi switched off, plug the Sister Card into the Synthi's keyboard Jones socket. Switch on the Synthi, LEDs should blink on the Sister Card. To start, set the input channels 1 & 2 level pots to around 6.

### LFOs

Each LFO has 2 output level pots to each modulation bus for each waveform.

The frequency pot changes the oscillator frequency.

The range switch selects hi or low range.

The shape pot changes both waveforms together and fine tunes the frequency.

### Sample & Hold

A signal should be patched to the S&H sample input via the meter column (noise, oscillator...).

The clock switch selects the card's LFO that clocks the S&H : up it's the top LFO, down it's the bottom LFO, center is no clock.

The S&H has 2 output level pots to each modulation bus for both normal and slewed CV.

The lin/log switch selects the slew pot lin or log response.

### Modulation busses

The left bus is on row 8, the right bus on row 9.

Each bus mixes the 6 signals from the LFOs and S&H according to their pot setting.

The Synthi's input channel level pot acts as a final mix level pot for each bus.

The inv switch inverts the mixed signal.

### Gate switch

Up : the top LFO fires the Synthi envelope

Down : the bottom LFO fires the Synthi envelope

Center : no LFO fires the Synthi envelope

### Attenuverter pins

The attenuverter pins are not related to the Sister Card's other sections and can be used to patch any signal in the matrix, coming from the Sister Card or from the Synthi. Each pin is independent.

With the pot set to 12 o'clock, no signal passes,

Turn the pot CCW for attenuated inverted signal, fully CCW the signal is as strong as with a normal pin but inverted.

Turn the pot CW for attenuated signal, fully CW the signal is as strong as with a normal pin.

Warning and disclaimer : the card's power consumption is close to 50mA on each -9V/+12V power rail, which is the maximum a MK1 PSU can handle according to the VCS3 MK1 users manual.

It *should* work with factory condition MK1 units but will push this old PSU to the limits. I assume no liability in case of problem (anyway, it can be repaired, no worries).

An extra PSU can be added to MK1 units to power a KS / TKS keyboard and the Portabellabz expansion cards, the upgrade is detailed in [http://www.portabellabz.be/images/sq1/MK1\\_PSU\\_upgrade.pdf](http://www.portabellabz.be/images/sq1/MK1_PSU_upgrade.pdf)

Thank you and have fun !

C.