PORTABELLABZ

The CV/gate Card for Synthi A / VCS3

Hi

Thank you very much and congrats for purchasing the plug and play CV/gate Card.
You'll definitely enjoy how it expands your Synthi.

Features

gate input
- accepts signals from +4.5V to +15V
- 3 position toggle switch
    • top - sustained : the on time depends on the gate signal length, ie how long the key is depressed
    • center - off : no gate signal is sent to the Synthi
    • bottom - transient : the gate signal is converted into a short trigger and the on time depends on the on pot setting only

cv1 input
- tracks on about 5 octaves
- CV available on row 8
- 2 position mini slide switch
    • left - CAL : pre-scaled input with input ch level 1 pot set fully CW to 10, see scaling procedure below
    • right : standard CV input with 100k series resistor for manual scaling with the input ch level 1 pot

cv2 input
- tracks on about 5 octaves
- CV available on row 9
- 2 position mini slide switch
    • left - CAL : pre-scaled input with input ch level 2 pot set fully CW to 10, see scaling procedure below
    • right : standard CV input with 100k series resistor for manual scaling with the input ch level 2 pot

cv3 input
- tracks on about 5 octaves
- CV available on row 16 if your Synthi is a MK2 with a joystick vertical range switched pot (or a modified MK1)
- pre-scaled input only, see scaling procedure below
- 2 position toggle switch
    • top : normal CV
    • bottom - inv : inverted CV

1V/oct scaling

Your CV/gate Card was checked and calibrated on my own Synthi prior to ship however it may need slight adjustment to fit each individual Synthi.
Use the same pins whose value is matched 1% for calibration and performance to have always the same CV. It's good to measure and select a few pins that will be the same color or marked to use with the CV/gate Card.

Any 1V/oct CV/gate controller (keyboard, sequencer, midi to CV converter) can be used.

1. Plug the CV/gate Card into the Synthi's keyboard socket turn it on.
2. Switch the mini slide switch to CAL.
3. Plug the 1V/oct controller's CV output into the cv1 mini jack socket.
4. Set the Synthi input level ch1 pot fully CW to 10.
5. Patch an oscillator to the output.
6. Patch a selected pin into row 8 to control this oscillator's frequency.
7. Set the oscillator's frequency vernier dial to around 4.5 to get an accurate note with the keyboard's lowest note (0V).

8. Play the key 1 octave higher and adjust the CV/gate Card's cv1 trim to get a note 1 octave higher using your ear or a tuner.
9. Proceed the same until 5 octaves, with a good working Synthi you'd be able to get proper tracking over 5 octaves with minimal drift.
10. Proceed the same for the cv2 input via the input ch2 on row 9.
11. If your Synthi is a MK2 with a joystick vertical range switched pot, proceed the same for the cv3 input, with the inv switch in top position and the joystick vertical range pot switched below 0 (sequencer setting).

Tips

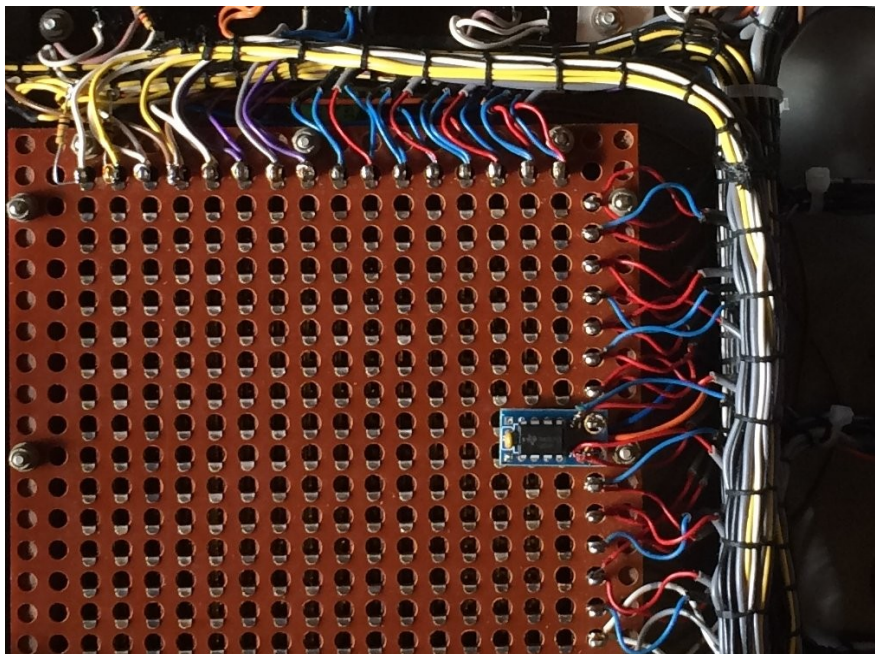By design, oscillator 3 tracks differently from oscillators 1 and 2.
Oscillators 1 and 2 may track a little differently.
Scale cv1 for oscillator 1, cv2 for oscillator 2 and cv3 for oscillator 3 to compensate for the tracking differences

From the factory, the Synthi is unbuffered and patching more than 1 pin into rows 8 and 9 will cause CV drop.
Buffering rows 8 and 9 fixes this and can be done by installing the supplied buffer chiclet.

1. Open the Synthi.
2. Remove the 3 boards.
3. Locate rows 8 and 9 on the back of the matrix and desolder the cables.
4. Insert the buffer chiclet along rows 8 and 9 lugs and solder it paying attention its bottom doesn't touch the matrix and its top doesn't touch board B when in place.
5. Solder the cables you desoldered to the square pads on the buffer chiclet.
6. Solder the buffer chiclet's orange cable to +12V and blue cable to -9V.
   In most Synthis the color code is the same : orange cables are +12V and blue cables are -9V, otherwise check with voltmeter. The power rails are accessible on various pots : reverb mix, decay, oscillators shape and frequency.
7. Adjust tracking if needed.

More details and pics on http://www.portabellabz.be/synthipcbs.html#buf

Thank you and have fun !
C.