

SYMBIOTIC USER INSTRUCTION

Hi thanks for your support, here is a quick guide on how to use your **Symbiotic** kit

HOW IT WORK...

Small changes in electrical conductivity are measured between the electrodes attached to the leaves and inserted into a preprogrammed microcontroller. changes are detected using averages and standard deviation calculations that produce **MIDI** notes and control changes.

The circuit used to detect biological galvanic conduction is based on a **555** timer **IC** set as a multivibrator, similar to a simple lie detector.

The exploration and practice of sonification of biodata can allow a student, musician, scientist or florist to hear the secret life of plants, in fact it allows, thanks to the reading of the biodata, the random generation of notes useful for meditating or taking inspiration from nature.

SETUP

To turn on symbiotic just connect a **9v** battery, to the battery clip and move the **on/off** switch to the left.

You can connect the probes directly on probe **jack socket** or you can use a simple arduino jumper cable as a probe, now you can place the electrodes on the leaf of plant.

Now you should see the **LEDs** light up randomly based on the detected biodata

The midi signal will come out from the **5 pin midi port**, the analog signals (cv, gate, trigger) will be output from the jacks socket to control analog synths or eurorack (output signal range **0-5V**) attention the analog signals will only come out if the device is set to midi channel 1

MIDI TO CV OPTIONS

The small switch **plant/midi** to cv if positioned on the left on plant will convert the signals coming from the midi plant into analogue if the switch is positioned on the right it is possible to use the device as a normal midi to cv converter by sending a midi signal on the midi **5pin port**.

HOW THE MENU WORKS

The settings menu works with an additional button and knob to set the threshold, **MIDI** channel, note scale and **LED** brightness.

- Press the button once to enter the menu. One of the **LEDs** will slowly begin to fade.
- Move the knob to select the setting you want to change (10 second timeout when the knob is not moved)
- Press the button to access the selected settings. **LED fading** will get much faster when you are at it.
- Change the setting value by moving the knob.
- Store the value by pressing the button again.
- In the first menu level, you can select the setting to be changed with the following color coding.

Led 1 - Threshold

Led 2 - Scale (scale Chrom; scale Major; scale Indian; scale Minor)

Led 3 - MIDI channel

Led 4 - LED brightness