

Expert Sleepers



cicely

User Manual

Revision 1.0

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Introduction

Congratulations on your purchase of an Expert Sleepers “Cicely”. Please read this user manual before operating your new module.

Cicely is an “octave fuzz” effect, inspired by the legendary “Octavia” guitar pedal, created by Roger Mayer and most notably used by Jimi Hendrix. There is an interesting history of the pedal on Roger's website [here](https://www.roger-mayer.co.uk/octavia.htm)¹. Cicely adapts the concept for the modular environment, adds some extra features, and of course puts the effect under CV control.

The effect is essentially one of adding an octave on top of the input note, but this only really applies to pure input tones – for more complex tones, the sound is changed in all sorts of interesting ways. This is combined with the possibility of overdriving the sound for even more edge, while the unique 'Centre' control adds asymmetrical clipping.

As a bonus feature, Cicely also includes an envelope follower.

The module is 100% analogue.



Installation

House the module in a Eurorack case of your choosing. The power connector is 16-pin [Doepfer standard](http://www.doepfer.de/a100_man/a100t_e.htm)². If using the power cable supplied with the module, the red edge of the cable is closest to the bottom edge of the PCB, and carries -12V. ("-12V" is marked on the PCB itself next to this end of the connector.) Be sure to connect the other end of the power cable correctly, again so -12V corresponds to the red stripe on the cable.

Power requirements

Cicely draws up to 51mA on the +12V rail, and 43mA on the -12V rail.

It does not use the 5V rail.

1 <https://www.roger-mayer.co.uk/octavia.htm>

2 http://www.doepfer.de/a100_man/a100t_e.htm

Inputs and outputs

Cicely's input and output jack sockets are illuminated, lighting red for positive voltage and blue for negative voltage. (Audio appears purple, since it is a rapid alternation of positive and negative.)

From top to bottom, Cicely's sockets are:

- Gain CV input
- Centre CV input
- Mix CV input
- Envelope follower output
- Envelope follower output (inverted)
- Audio input (x2)
- Audio output

For the Gain and Mix CV inputs, a voltage range of 5V corresponds to the full range of the knob. For the Centre CV input, a voltage range of 10V corresponds to the full range of the knob. In all cases, the knob and CV are simply added, and negative CVs are accepted (a negative CV having the same effect as turning the knob counter-clockwise).

Controls

There are five knobs, which are (from top to bottom):

- Gain
- Attenuator for the Gain CV input
- Centre (note that the '0' position for this knob is at 12 o'clock)
- Attenuator for the Centre CV input
- Mix

Theory of operation

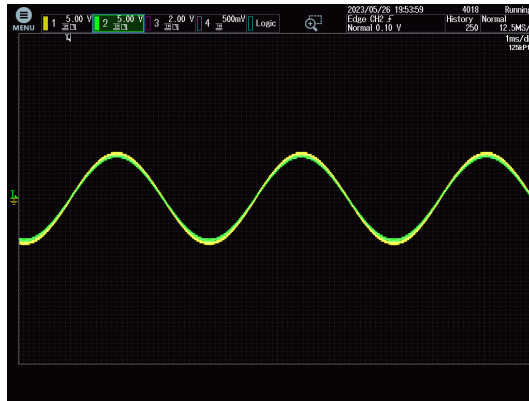
The audio input is passed first into the gain stage (controlled by the Gain knob and CV) and then into the octaving circuit (which is influenced by the Centre knob and CV). The octave output is then mixed with the input signal according to the Mix knob and CV.

For a classic Octavia tone, start with the Mix around '9', Centre at '0' (12 o'clock), and fairly high Gain (depending on the strength of your input signal). You may also want to follow Cicely with a filter to roll off some of the high end, to mimic the effect of a guitar amp and cab.

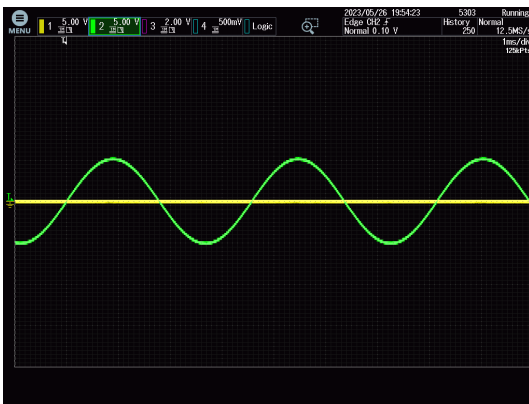
The two audio inputs are simply summed.

Gain and Mix

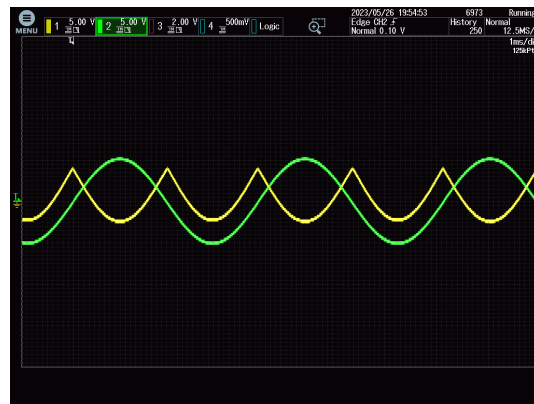
In the images below, the green trace shows the input, while the yellow trace shows the output.



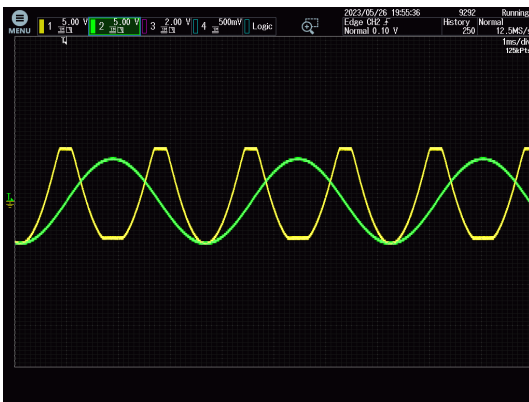
Mix at '0'



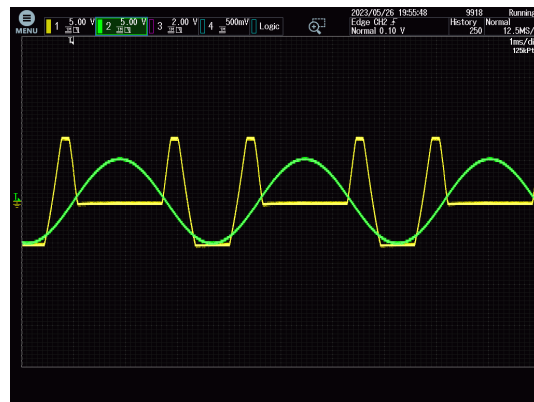
Mix at '10', Gain at '0'



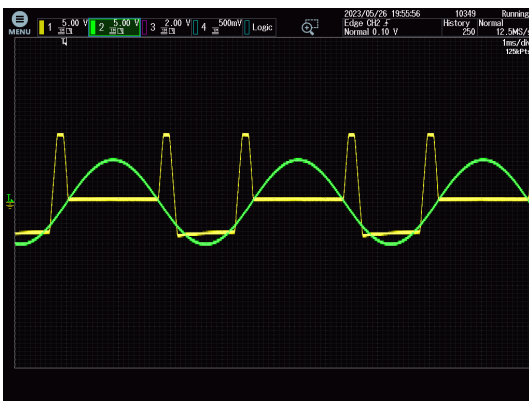
Mix at '10', Gain at '5'



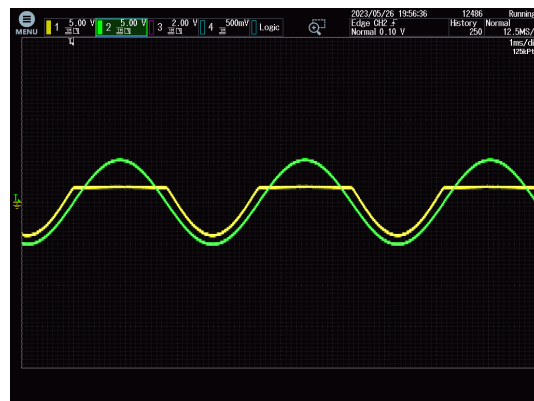
Gain at '6'



Gain at '7'

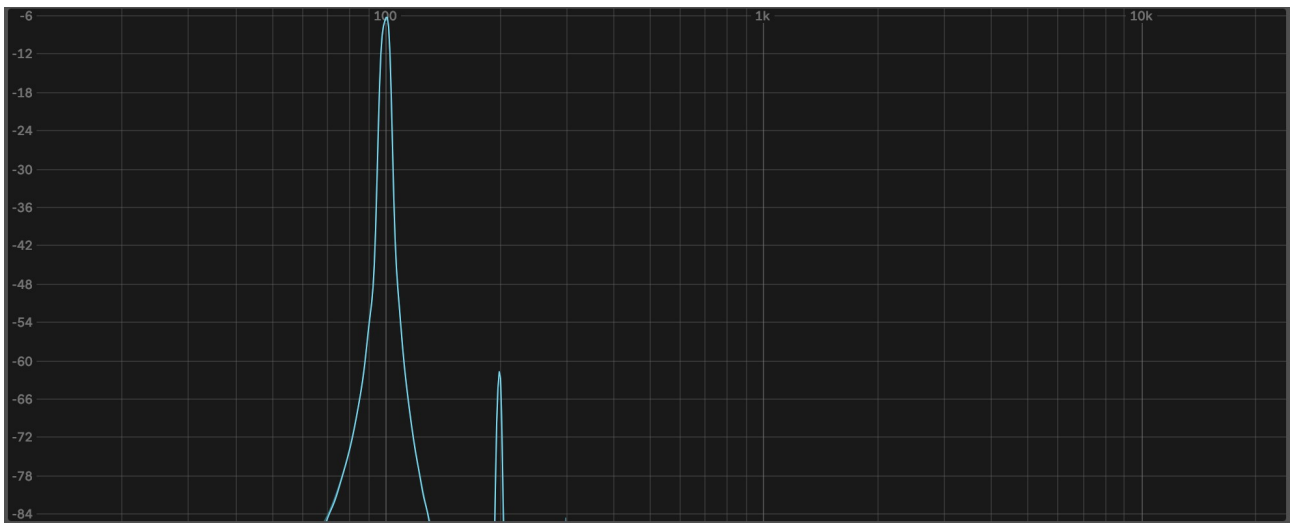


Gain at '10'

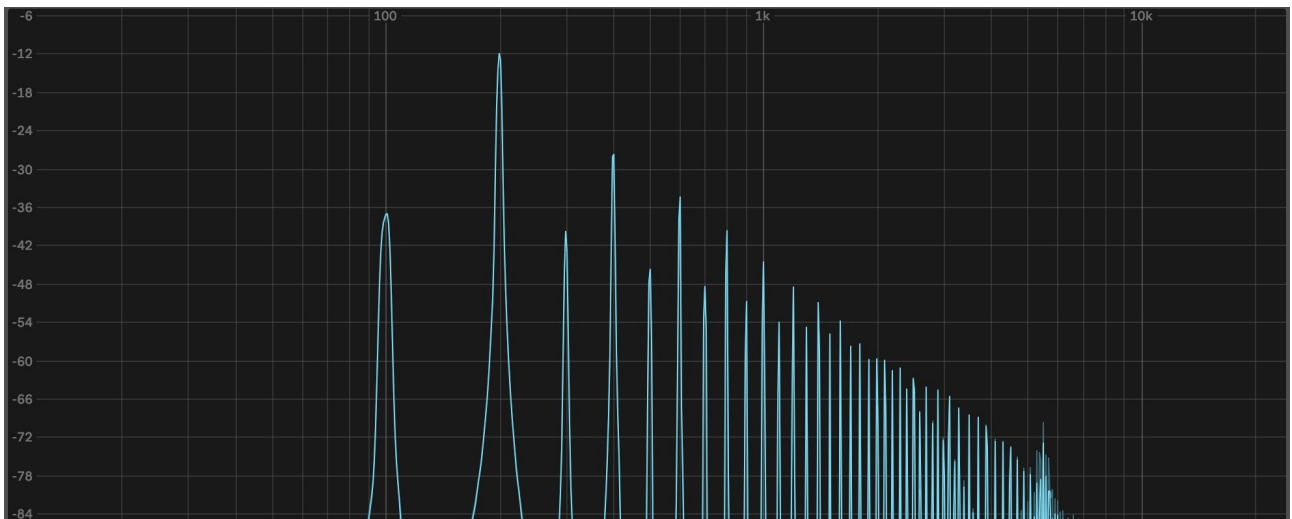


Gain at '5', Mix at '5'

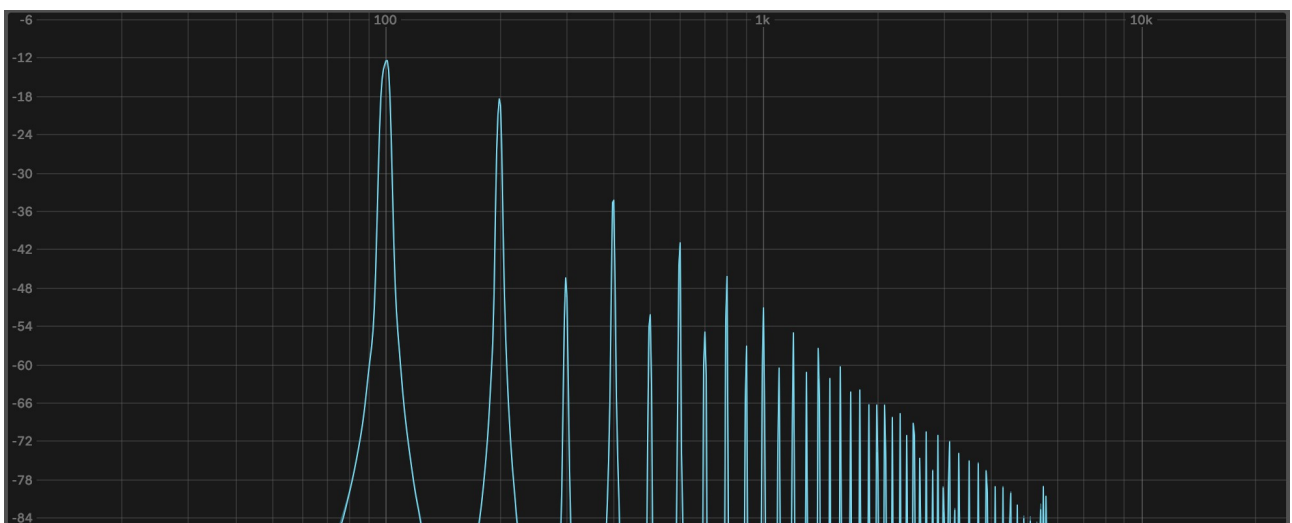
It is also instructive to look at the harmonic spectrum of the audio, possibly more so in fact than looking at the waveforms. These were all captured with the gain at '5'.



Input (100Hz sine wave)



Mix at '10' - note the prominent second harmonic and much-decreased fundamental

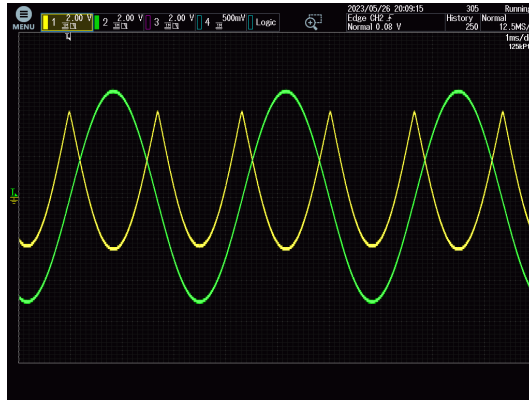


Mix at '5'

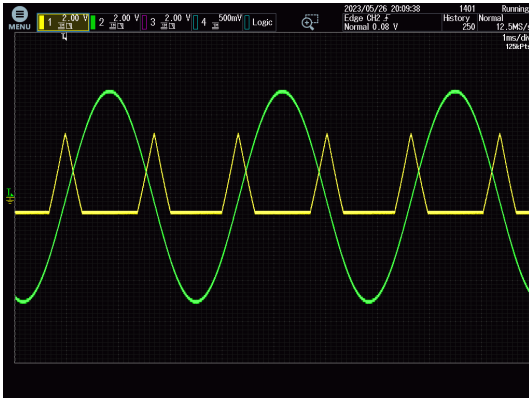
Centre

The Centre knob and CV apply a DC offset to the octaving circuit, resulting in asymmetrical clipping. This is particularly effective when modulated (for example with an LFO) and gives a sound not unlike pulse-width modulation (PWM) on a VCO.

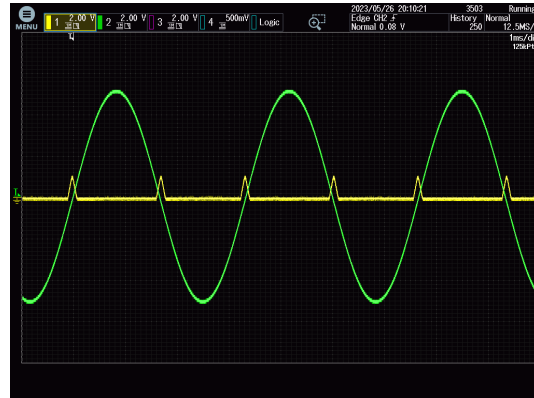
The images below all show Gain at '5' and Mix at '10'.



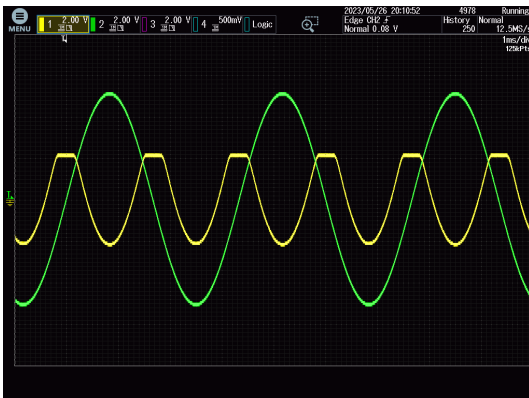
Centre at '0'



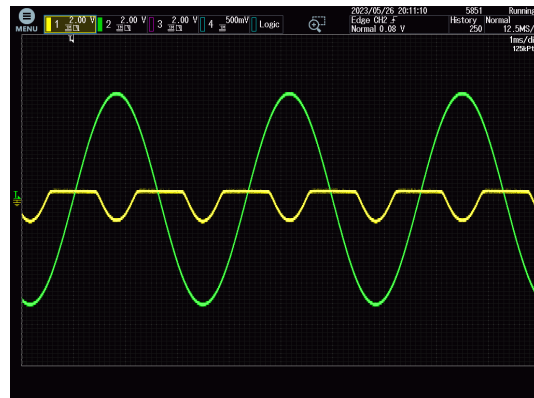
Centre at '2'



Centre at '3'



Centre at '-2'



Centre at '-3'

Envelope follower

The envelope follower tracks the amplitude of the input signal. The two envelope outputs offer both noninverted and inverted copies of the envelope.

In the image below, the green trace is the input signal, the yellow trace is the noninverted envelope, and the magenta trace is the inverted envelope.

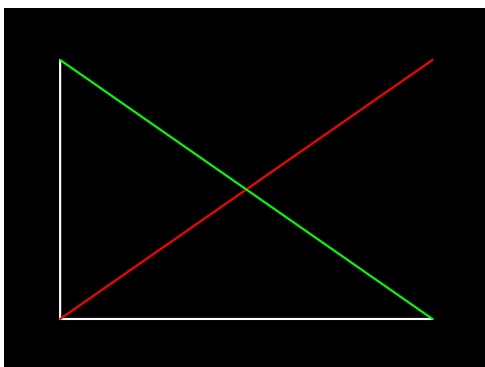


Envelope follower outputs

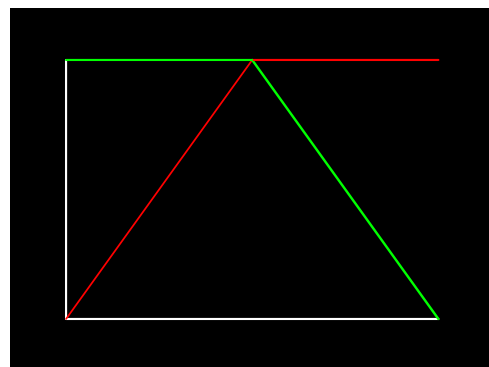
Jumpers

There are two jumpers on the upper PCB, labelled JP1 and JP2. These control the nature of the dry/wet mix, as follows:

- Without the jumpers fitted, the mix is a linear crossfade of the dry and wet signals – at the halfway point, the output is 50% wet and 50% dry.
- With the jumpers fitted, the halfway point is 100% wet and 100% dry. Below halfway, dry stays at 100% and wet fades off as the knob moves towards '0'. Above halfway, wet stays at 100% and dry fades off as the knob moves towards '10'.



No jumpers



With jumpers fitted

Normally you would either fit both or neither jumpers, but you are of course free to do what you feel gives the best results.

From the factory, the jumpers are in the 'not fitted' position.

Calibration

There is nothing in Cicely than can be or needs to be calibrated.

Where to get help

Email, forum, and social media links can be found at the bottom of every page on [our website](#)³.

Acknowledgments

Black and white photography by [Israel Denadai](#)⁴.

3 <https://www.expert-sleepers.co.uk>

4 <http://israeldenadai.com.br/bw>