

## **microcell** granular processor

### firmware update instructions

## Firmware Installation

microcell supports the audio-based firmware update method used on the original Clouds. Download the latest WAV file from [www.microcell.cc](http://www.microcell.cc) and read the instructions below to install updates.

1. Unpatch all inputs and outputs from microcell, then connect your audio playback device to the LEFT audio input of microcell using a standard 3.5mm patch cable.
2. Set the playback volume on your device to slightly less than the maximum. Mute any device microphones, notification sounds, or other audio sources which might interfere with playback. Unplug any peripheral devices such as USB printers which might create background noise.
3. Power on your modular system while pressing the HOLD switch on microcell. The white HOLD switch LED will blink, indicating that the module is ready to receive data. Set the INPUT knob to its center position.
4. Start playing the WAV file. The HOLD switch LED will blink faster, indicating that data is being received. The WAV file is about 2m 44s long. After a successful update, the module will reboot. If the HOLD switch LED stops blinking for more than a few seconds during playback and the yellow Time/Bank LEDs start blinking persistently instead, the update failed. Check all connections, audio signal levels, etc and then try again. Note that the VU meters will show the input signal level during the update so that you can monitor the audio levels. Ideally the VU meters will peak in the yellow (not red) during playback. Be sure to calibrate the module using the instructions on the next page once the update is done.

## Calibration

Calibration should always be performed after making firmware updates. Otherwise certain CV inputs and knob ranges may not be properly scaled.

1. Turn your modular system off, then power on again while holding the TRIG switch on microcell. The input VU meter will start to blink.
2. Patch a cable into the V/OCT input (**not** the Pitch input) and send a 1V DC offset into the module. Many Eurorack modules can generate DC offsets but you will need some way to measure the voltage, such as a digital multimeter. Alternately you can use a module like Mordax DATA to generate precise DC offsets. Once you've verified that a 1V offset is patched into the V/OCT input, tap the TRIG switch on microcell.
3. Now the output VU meter will start to blink. Change the 1V DC offset to 3V then tap the TRIG switch again. The calibration values will be saved and the module will be ready to use. If calibration fails, both of the VU meters will start to blink. Start over from step 1 and make sure you're sending the right voltages to the right input at the right time.

If you've tried everything and can't get the update to work or have problems with calibration, send an email to [info@microcell.cc](mailto:info@microcell.cc) and we'll respond as soon as possible. Videos that show what you're trying will be very helpful with troubleshooting.

## Firmware Release Notes

**Firmware V2** (released 2022-02-10) adds virtual attenuators for all DSP parameter CV inputs, providing more control over the microcell's internal parameter randomization. To enable/disable randomization, press and hold the In and Out mute switches for 5+ seconds. Use the instructions below to attenuate the degree of randomization. Of course the virtual attenuators can also be used to scale external CVs which are patched to the AUX input or the individual DSP parameter CV inputs.

Unipolar attenuation: Press and hold the TIME switch, then turn any DSP parameter knob (i.e. any knob besides Input and Output) within 3 seconds of pressing the switch (otherwise the DSP mode selection UI will activate). Turning from left to right will increase the level of modulation. To attenuate multiple parameters, turn other knobs before you stop pressing the switch.

Bipolar attenuation: Press and hold the BANK switch, then turn any DSP parameter knob (i.e. any knob besides Input and Output) within 3 seconds of pressing the switch (otherwise the preset UI will activate). This works as described above, but the knob functions an inverting attenuator. At the knob's center position, CVs are fully attenuated. Turning to the left will both increase the level of modulation and invert the phase of the control voltage. Turning to the right will increase the level of modulation without inversion.

Attenuation values will be saved when you stop pressing the associated switch. Saved values persist across all DSP modes. The virtual attenuators do not work for the Input and Output VCAs (which are analog controls).

**Firmware V1** (released 2019-07-01) was the initial Superparasites firmware for microcell, incorporating DSP code from Mutable Instruments, Matthias Puech, and Julius Kammerl. Source code maintained by Patrick Dowling of the Ornament & Crime team. Released under the MIT License:  
<https://github.com/patrickdowling/superparasites/>