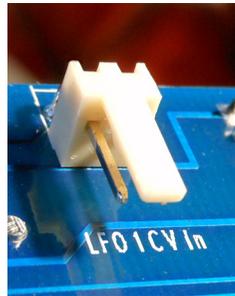


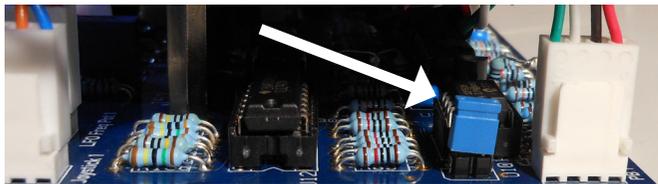
Each side of the 311C contains the following:

- Quadrature LFO with sine and cosine outputs and frequency control pot (range adjustable from several minutes cycle to low audio). LFO frequency can be voltage controlled via header on back of board, but please note that even though they will work at audio range, these are not intended to be 1V/Octave oscillators, and may not track a keyboard.



As this LFO takes multiple cycles to stabilise after power on, at very low frequencies, and this could take quite a while, there is a “kick-start” circuit built in which will raise the frequency temporarily when powered on so that panel settings can be left in place. Do not be alarmed if the frequency is higher at startup. It will revert to normal in a few seconds.

- Multi-mode gate with five modes. Three are available at a time; mode sets can be changed by removing a jumper on each side. (DIY tip: an external switch could be wired to these pins for easy access.)



This gate circuit will make a 10V gate signal out of any CV that is patched into its input.

- Grant Richter’s original JAG (Joystick Axis Generator) with unipolar/bipolar switch. (It is important to put the switch in the correct position for the input signal, eg. when running

the JAG from a bipolar signal, switch to +/- 5 V position, and vice-versa.

The JAG takes two (X and Y) input voltages and maps them to 10 different outputs. Using the Sine/Cosine LFO to control the JAG allows circular modulation. Using two different frequency LFOs to control X and Y will create Lissajous modulation.

- Two-mode buffered joystick (joystick outputs will be either bipolar or unipolar, according to position of JAG polarity switch). This means that the joystick can be used to control the JAG in both modes. (Joystick is normalised to JAG inputs, but the raw joystick outputs can be used simultaneously.)
- Illuminated gate button (shows status when active).

### Adjustment Trimmers:

Several side-adjust trimmers are located along the edges of the lower PCB and are accessible for user adjustment if desired. It is recommended to leave these set to factory settings in most cases, but documentation is provided below for advanced users:

**Dome Height 1/2:**  
Attenuates the Dome signal.

**LFO Level 1/2:**  
Sets the LFO level. This is adjusted to an optimum voltage for JAG operation (about +/- 6V), but can be adjusted to user preference.

**LFO Freq 1/2:**  
Sets the frequency offset for the LFOs. Allows some customisation of the LFO range available on the front panel control.

Please avoid changing the trimmer labelled “Ref” as this sets an internal 5V reference voltage.

