

README

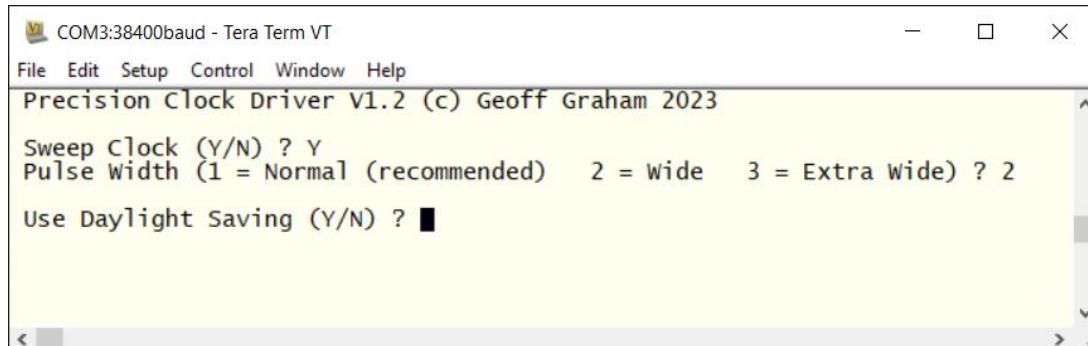
V1.0 Original firmware

V1.1 Small improvement in clock accuracy (about $\frac{1}{2}$ second).

V1.2 Support for wide and extra wide pulse widths for sweep clocks (see below)

Setting the Pulse Width

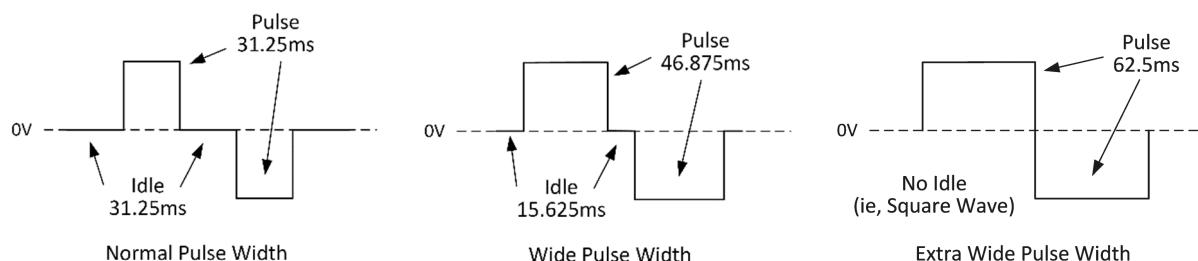
It has been discovered that some sweep clocks require a wider pulse width than the normal waveform provided by the Ver 1.1 firmware. Ver 1.2 allows for this to be configured as follows:



This extra configuration step is only displayed for sweep clocks. Stepping clocks are not affected and operate as described in the magazine article (ie, no change).

When a sweep clock is selected you can select from a **normal** pulse width which is the same as the waveform generated by earlier versions of the firmware, or **wide** which generates a driving pulse that is 50% wider or **extra wide** which generates a square wave output (ie, 100% wider).

These outputs are illustrated below:



The only reliable method for determining the driving waveform required by your clock's movement is to use an oscilloscope to check the waveform generated by the clock's built in controller chip before you modify the movement. You can then configure the firmware to generate the nearest matching output.

However, most people do not have access to an oscilloscope, so you will have to experiment. The best approach is to start with a normal pulse width output and if the clock stalls or loses a lot of time try reconfiguring with a wide pulse width. Then, if the same thing happens again, try the extra wide pulse width setting. Another indication that a wider pulse width is required is that the clock stops early with a reasonable battery life left (ie, a terminal voltage of 1.1V or greater).

Selecting an output pulse width that is wider than necessary will not have any detrimental effects (ie, the clock will run normally). The only issue is that the battery life will be reduced by 15% to 20%.

Note that most sweep clock movements expect the normal pulse width. Only a few require a wide pulse width (notably sweep clocks by Ikea) and clock movements that require the extra wide pulse width are very rare.

Also, this requirement only applies to sweep clocks. Not stepping clocks.