Thank you for purchasing a TAPR product. The associated software and directions can be obtained from the web. Here is some basic information and a link to the documentation:

## The **PulsePuppy Carrier Board for Ocxo and TCXO Oscillators**

The TAPR **PulsePuppy** is a carrier board for small user-provided oven controlled (“OCXO”) and temperature controlled (“TCXO”) oscillators. It supports “Eurocase” style OCXOs as well as a Crystek TCXO design and provides output signals not only at the oscillator frequency, but also at 1PPS, 10PPS, and 100PPS rates that can be synchronized with an external clock. The base kit does **not** include an oscillator.

## Why would you want a PulsePuppy?

[Time-nuts](http://www.leapsecond.com/time-nuts.htm) will probably be interested in using the board with an OCXO such as the IsoTemp model 131-100, which (in December 2017) seems to be available as surplus on eBay for less than $30, to provide a stable RF source as well as a PPS source that has the same syncronization capabilities as the TAPR [T2-Mini](http://tapr.org/kits_t2-mini.html), on a compact circuit board not much larger than the T2-Mini.

[HPSDR](http://openhpsdr.org/) and other ham radio users will be interested in using the PulsePuppy with a TCXO as a reference oscillator for their stations, because TCXOs have much lower current drain than oven oscillators, while still having adequate performance for virtually all amateur radio uses.   Our PulsePuppy Bundle includes a PulsePuppy and a Crystek TCXO.

## Other PulsePuppy Details

The default PulsePuppy configuration is for 5 volt oscillators with square wave (usually HCMOS) outputs. The PulsePuppy output is a TTL-level square wave. An external low pass filter can be used if a sine wave output is needed.

In addition to a square-wave output at the nominal oscillator frequency, the PulsePuppy includes a PIC-based frequency divider using Tom Van Baak's [picDIV](http://www.leapsecond.com/pic/picdiv.htm) firmware that provides outputs at 1 pulse per second (“PPS”), 10 PPS, or 100 PPS The divider can be synchronized to an external source in the same way as the TAPR TADD-2 and T2-Mini products. Other pulse outputs can be provided by loading different firmware into the PIC.

The PulsePuppy accepts from 8 to 15 VDC power input. Note that small OCXOs can have a surprisingly high power draw on start-up of 800 ma or more. This reduces quickly to a steady-state current of about 200 ma. If the power supply provides more than about 12 volts, the 7805-type voltage regulator provided with the kit will require substantial heat sinking and possibly replacement with another device. Lower supply voltages will keep things cool(er).

We've designed the PulsePuppy with flexibility in mind. Options on the board allow use with many oscillator types; these options are documented in the assembly and operations manual available at <http://www.tapr.org/~n8ur/PulsePuppy_Manual.pdf>.

Manual: [Installation and Operation Manual](https://web.tapr.org/~n8ur/PulsePuppy_Manual.pdf)

Contact us at **contact@tapr.org** for assistance, help or troubleshooting.

Best Regards, TAPR