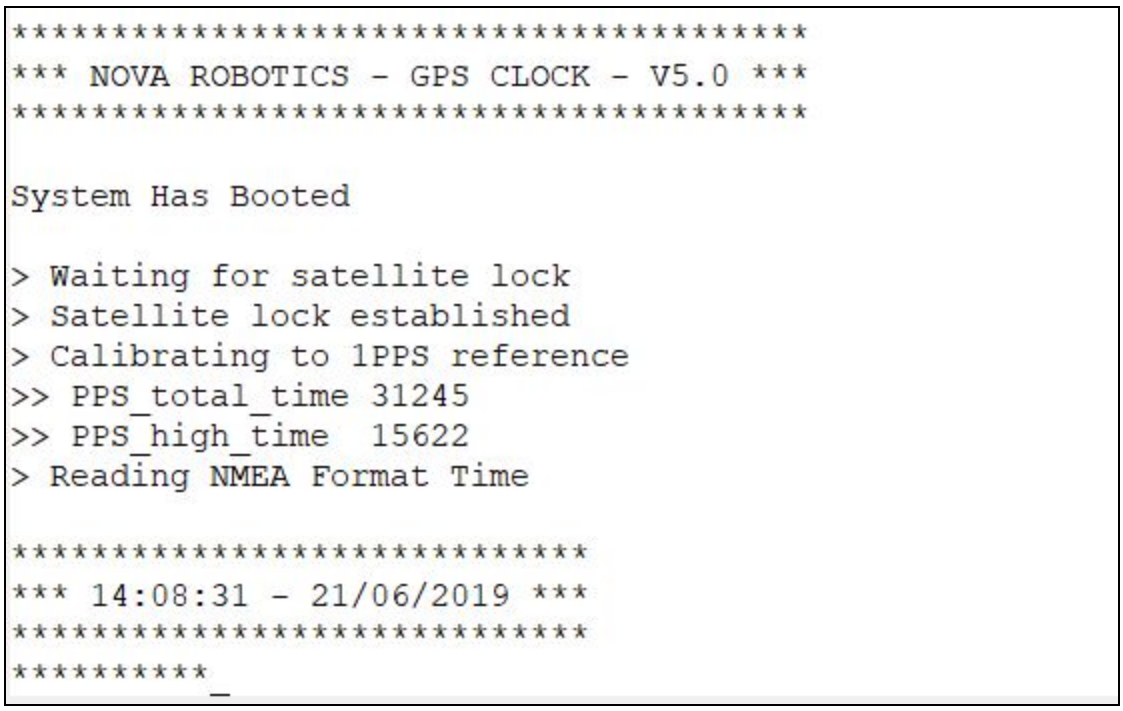
PMU Tester

The purpose of this document is to give insight in how and when to use the VI “00 PMU Tester V1”

00 PMU Tester V1 is a VI to be used once the PCB board has been populated, the PIC Microcontroller programmed,and the Garmin 18x GPS, power supplies, and subsequent wiring, has been set up. The VI itself is used to test whether or not all of the components above have been set up correctly, and are ready to be used with the 00 Main VI’s. If any of the mentioned components haven’t been set up, 00 PMU Tester V1 will not work.

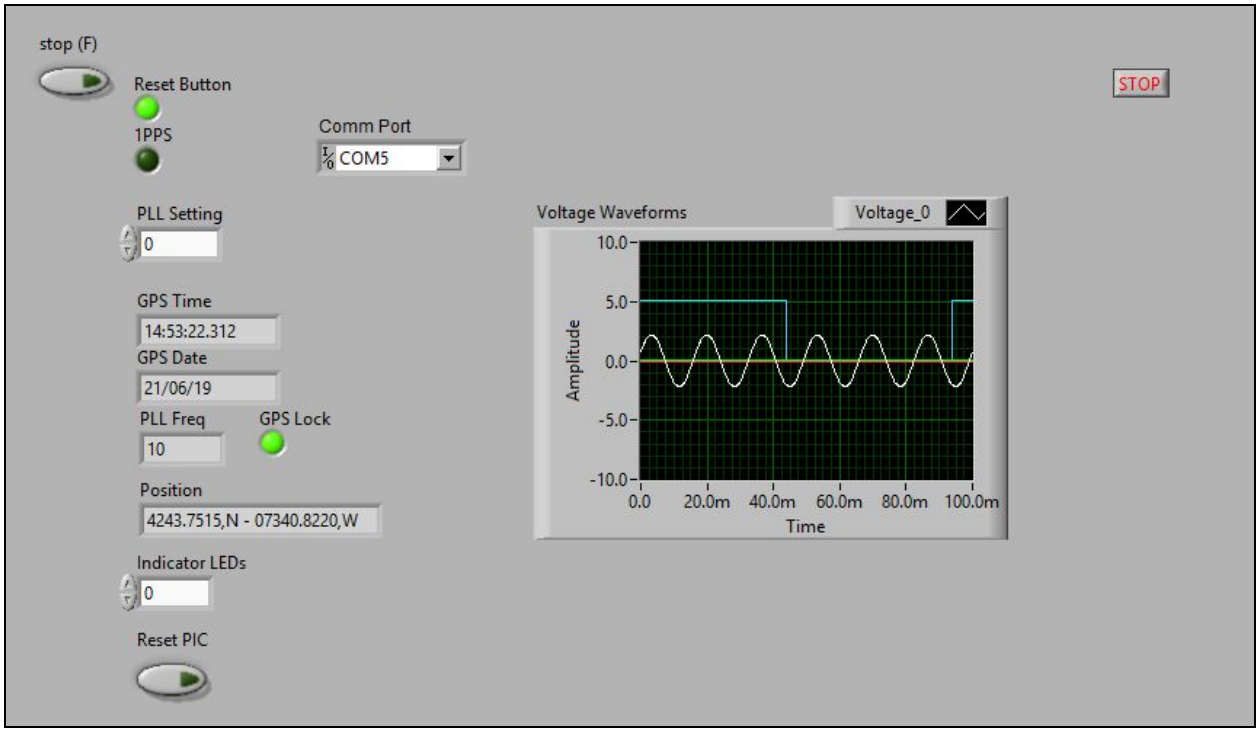
To use 00 PMU Tester V1, I would first set up the PCB board with just the power supplies and GPS. Power up the GPS, as you will probably have to wait awhile for the GPS to acquire a signal. As always, make sure the GPS is located near a window to optimally find your location.

Once enough time has elapsed, test that everything else is set up correctly by using HyperTerminal or HyperAccess to find the “Nova Robotics” message outputted when the PCB is powered up. You should also see several other messages that looks like the following:



Note: Each time OpenPMU receives a 1 Pulse Per Second (PPS) signal, an asterisk (*) is outputted to the terminal, shown on the last line of the of the image.

You are now ready to connect to 00 PMU Tester. The output should look something like this:



The image above shows the output. Several things to note

1. **The GPS data updates every 5 seconds, so if you do not see immediate results, let the VI run for at least 5 seconds.**
2. The 1PPS indicator should be flashing consistently.
3. All of the GPS time should be relevant. The hours may different from your timezone, but the minutes, seconds, and date should be correct.
4. The Voltage Waveforms graph shows two signals, a single phase signal and the 1 PPS signal, indicated by the sin and square wave respectively.

If the output is as expected you should be ready to use the 00 Main VIs and all subsequent VI's as well.

Note: Be careful of what your devices are labeled. A common error encountered occurs if you have more than one USB-6009 OEM. The devices are individual, and will register as "DevX", "DevY", "DevZ"... whenever you plug one into your computer. You can look at how many devices are registered in NI MAX. The error comes from the DAQ assistants only being able to use "Dev1". If you encounter the error, Error -201003 you will need to go into NI MAX, under **Devices and Interfaces,** and delete any unused devices, and rename the current devices to Dev1. Don't worry about deleting a device, as the device will be returned to NI MAX when you plug it into your computer again.