How to Use Agilent 16801A Logic Analyzer

1. Grab Pod1 (or Pod2), hook up the black ground wire (Gnd) to your board, and any signals you want to measure to the other probes, and note the probe number (like Pod1, probe 2)
2. Turn the power on the logic analyzer
3. After it boots up, click the "Engineer in Training" icon
4. In the Overview tab, in the Logic Analyzer Module, click the 1st icon "Bus/Signal Setup" [hover the mouse over the icons, and they tell you what they are]
5. Click or unclick a checkmark for each of the Pod Probes you are using. You can "Add Bus/Signal" for each signal to give it a unique name, like "MISO" or "Clock"
6. When done, Click OK
7. In the Overview tab, in the Logic Analyzer Module, click the 2nd icon "Sampling Setup"
8. The most important thing to set on these screen is the Sampling Period (the time between each sample). For example if your signal has a baud rate of 19200 Hz, that is about 52 microseconds per bit. If you want 10 samples per bit, set the Sampling Period to about 5 microseconds
9. When done, Click OK
10. In the Overview tab, in the Logic Analyzer Module, the 3rd icon "Trigger Setup" has some fancy triggering options we can skip for now…
11. Instead, in the WaveForm-1 Module, click "Show"
12. In this window, you should see all your probe signals listed in the left column. Pick one of those to trigger on (either rising or falling edge) by clicking the "X" drop down
13. Start your program running on your Microcontroller
14. Grab some data by pressing (with your finger, not the mouse) the button on the lower right side of the logic analyzer called "Run Single"
15. If it found your trigger event, you should see some waveform displayed. You can zoom in or out of the plot using the big knob on the upper right of the logic analyzer
16. There are also some markers you can set and move on the display to measure time between signals.
17. Take a picture with your phone of the plot.