

# Knock Monitor Pro V3

July 2 2019

## *Quick Start User Guide*

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**WARNING: READ ALL INSTRUCTIONS CAREFULLY!**

## Software Installation

Your license key and link to download Knock Monitor Pro would have been provided via email upon purchase. Run the setup exe file and install to the location of choice. It is recommended you leave the installer at the default settings. Software can be otherwise downloaded at [Turnererd.com/downloads](https://turnererd.com/downloads)

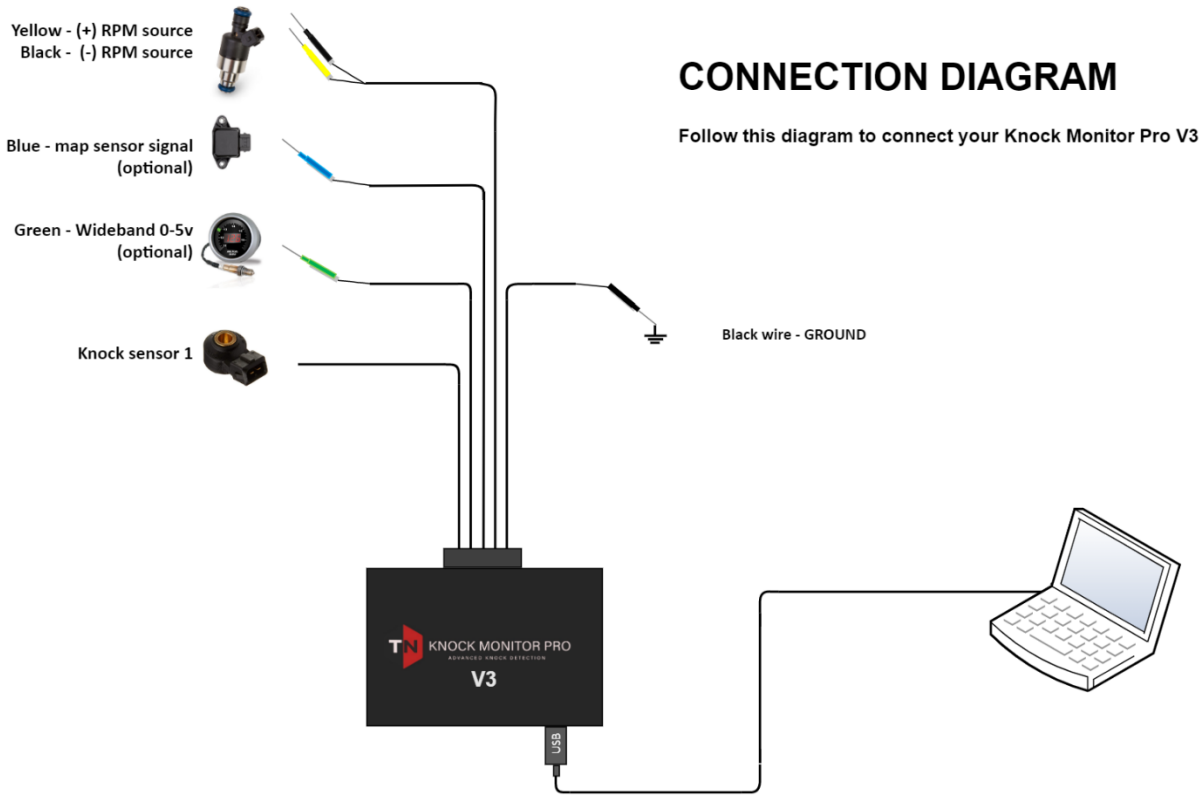
## Hardware Installation

**WARNING: Be sure to follow the instructions below. Also, be sure you check the voltages of the wires before probing with the 5V inputs. RPM signal, this can go up to 16V.**

### Cables

The unit provides a 10ft USB cable. The unit itself is **designed to be placed inside the engine bay during tuning** (pick a relatively cool spot). Extend the USB cable inside the car through a window. The sensor harness is 4 feet long.

## Version 3 Device



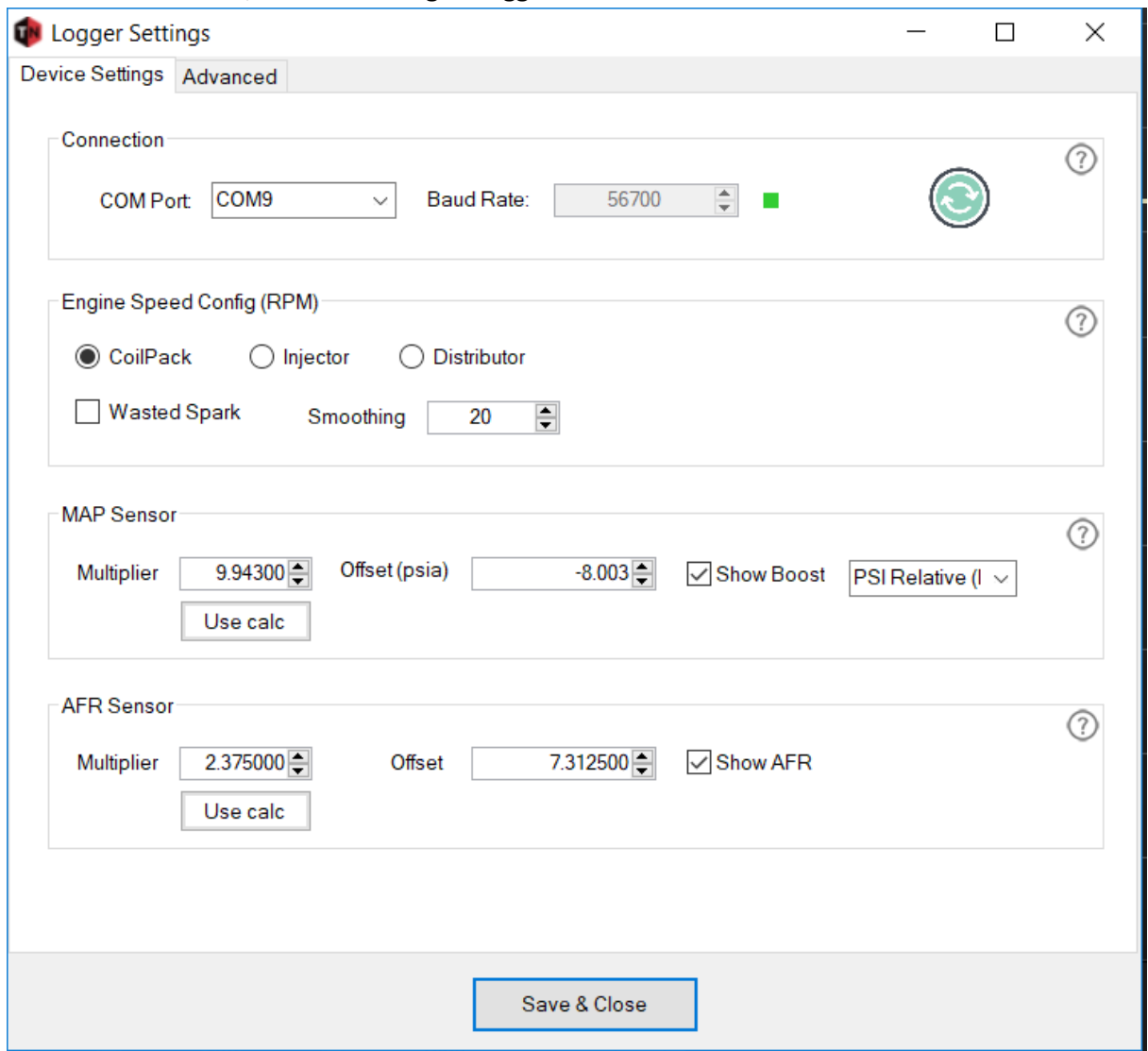
## Full Setup Instructions

Connect your probes to your sources:

1. **Yellow probe** – Positive RPM source (+)
2. **Black probe** (beside yellow)– Negative RPM source
  - i. Tip: When using Injector as RPM source, for most cars the injector positive is usually constant (+12v) and the ground is the switched pulsed signal.
  - ii. **Both probes need to be connected** for RPM signal.
3. **Blue probe** - MAP sensor signal
4. **Black probe (single)** – Sensor ground source – Important when using Map and AFR sensors!

For the other connector:

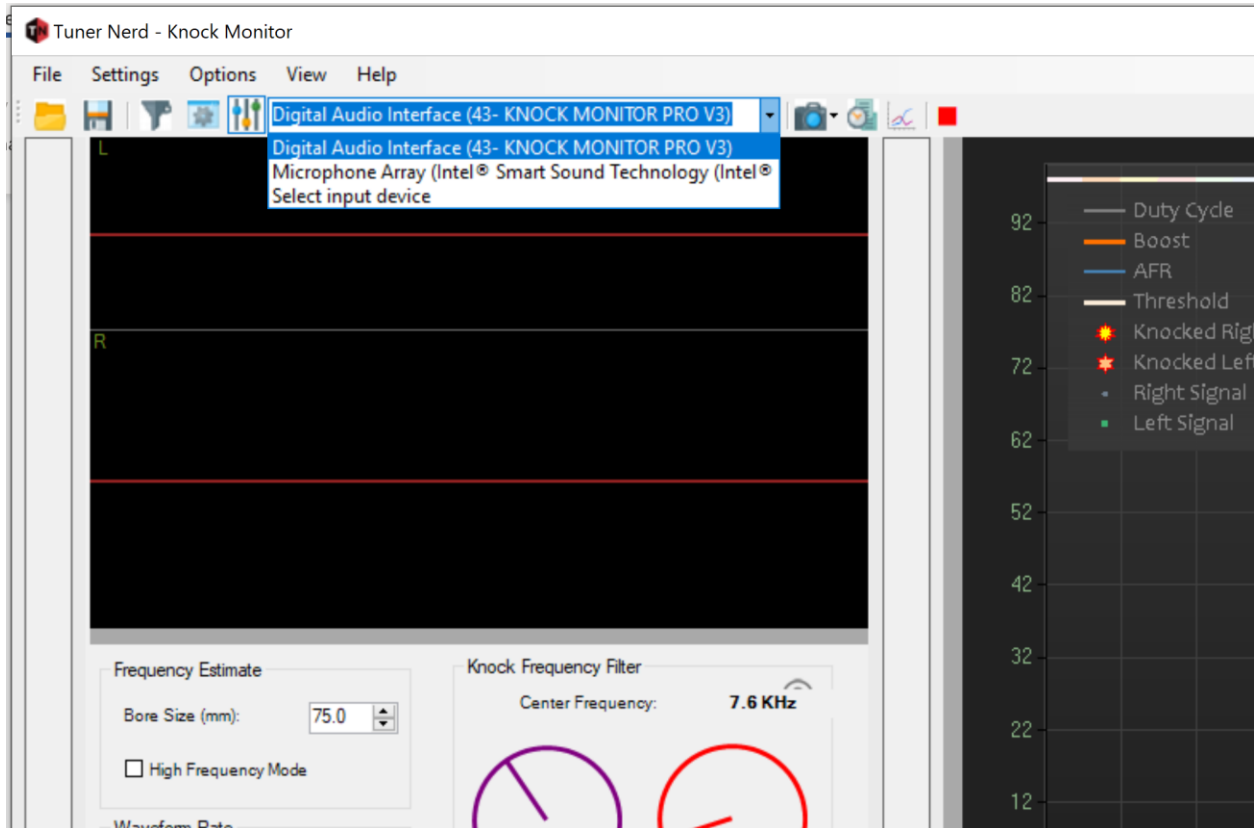
5. **Green** - Wideband controller (5V signal) (AEM - white wire, Innovate - yellow wire)
6. **Purple** - Analog output from Knock Monitor Pro - 3.3V max
7. Connect your knock sensor
8. Connect USB cable to your computer and the knock monitor.
9. In Knock Monitor Pro, click the **Settings > Logger** menu item.



10.
  - a. Select the COM Port that the device is connected to and select the engine speed configuration.
  - b. For smoothing, use 5 to 15 when injector is the RPM source, use 5 for Coilpack (preferred).
11. Set your map sensor multiplier and offset. You can use the calculator if you are unsure.
12. If connected, set your AFR sensor multiplier and offset. Please fine tune offset number until it matches your gauge.
13. Save and exit the logger settings window

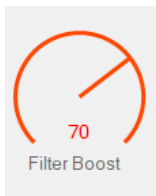
14. Select the input device which will provide the knock sensor source:

Select the preferred device from the device menu:



## Setting Threshold

1. Right click the graph on the right and choose **Flatten**.
2. Set your engine to safe timing and fueling levels.
3. On the left, set the bore size of your engine's cylinder. This will set the frequency.
4. **Filter boost** value should be at around 70, give or take.



5. Start your car. Take notice if the RPM displayed in the software is correct. Also note the AFR and Boost values (if connected). Please note: no sound info will be displayed until recording has started.
6. Press record.
7. While in neutral, give the car some revs to about 5000 rpm to ensure the sound level is being picked up by the software. You should be able to hear this in your headphone.
  - If no sound, please refer to **Sound Troubleshooting** section of this document.
  - The sound should be quiet at this point and gets louder as the engine speed is increased

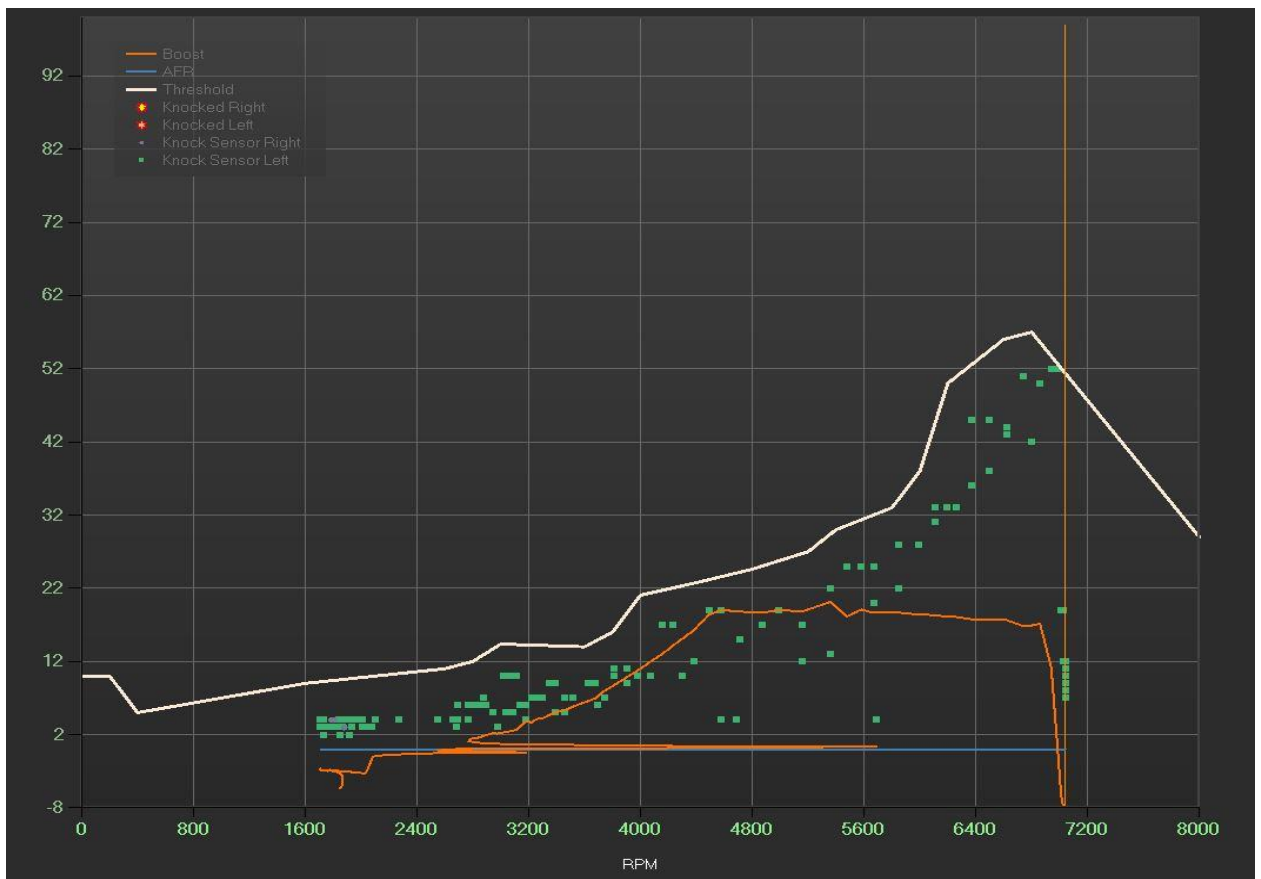
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8. Take a wide-open throttle pull in the gear you plan to monitor
9. Your graph should look like this:



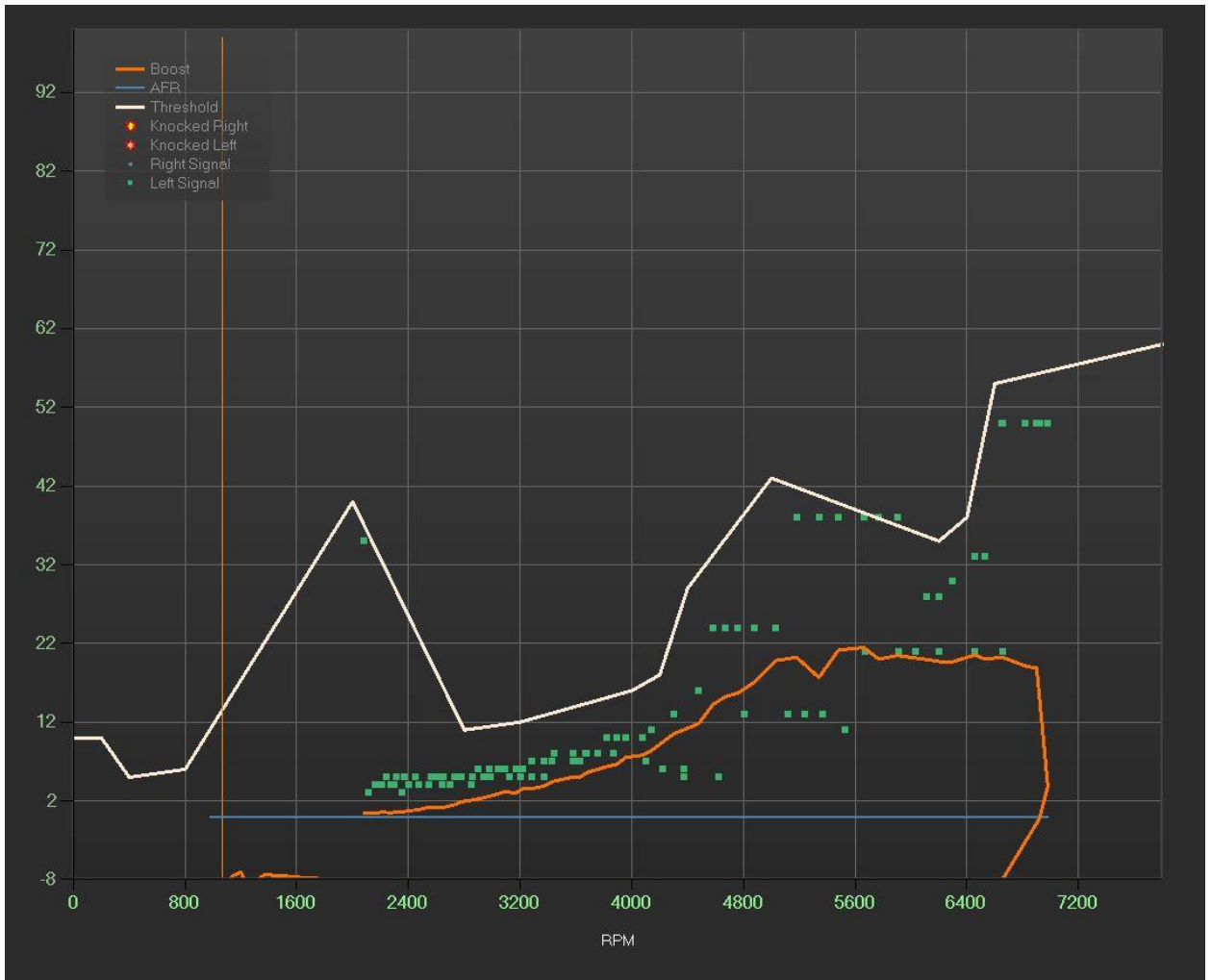
In this log, we started from 1600 RPM and ended at 7000 RPM. Notice the green dots, which represents combustion sound level, follow an almost predictive path, ranging from 2% to 70%. If your levels at redline are much higher than 70% of the chart, reduce the **Amplify** Knob. Alternatively, If your combustion levels at redline are much lower than 70%, increase the **Amplify knob** and hit replay to verify the new levels. This is to maximize accuracy of the filter.

9. Finally, generate your threshold by clicking the chart > **Set as threshold > last pull, left channel** (or right channel). This will create a threshold based on the last pull or replay of the recording:

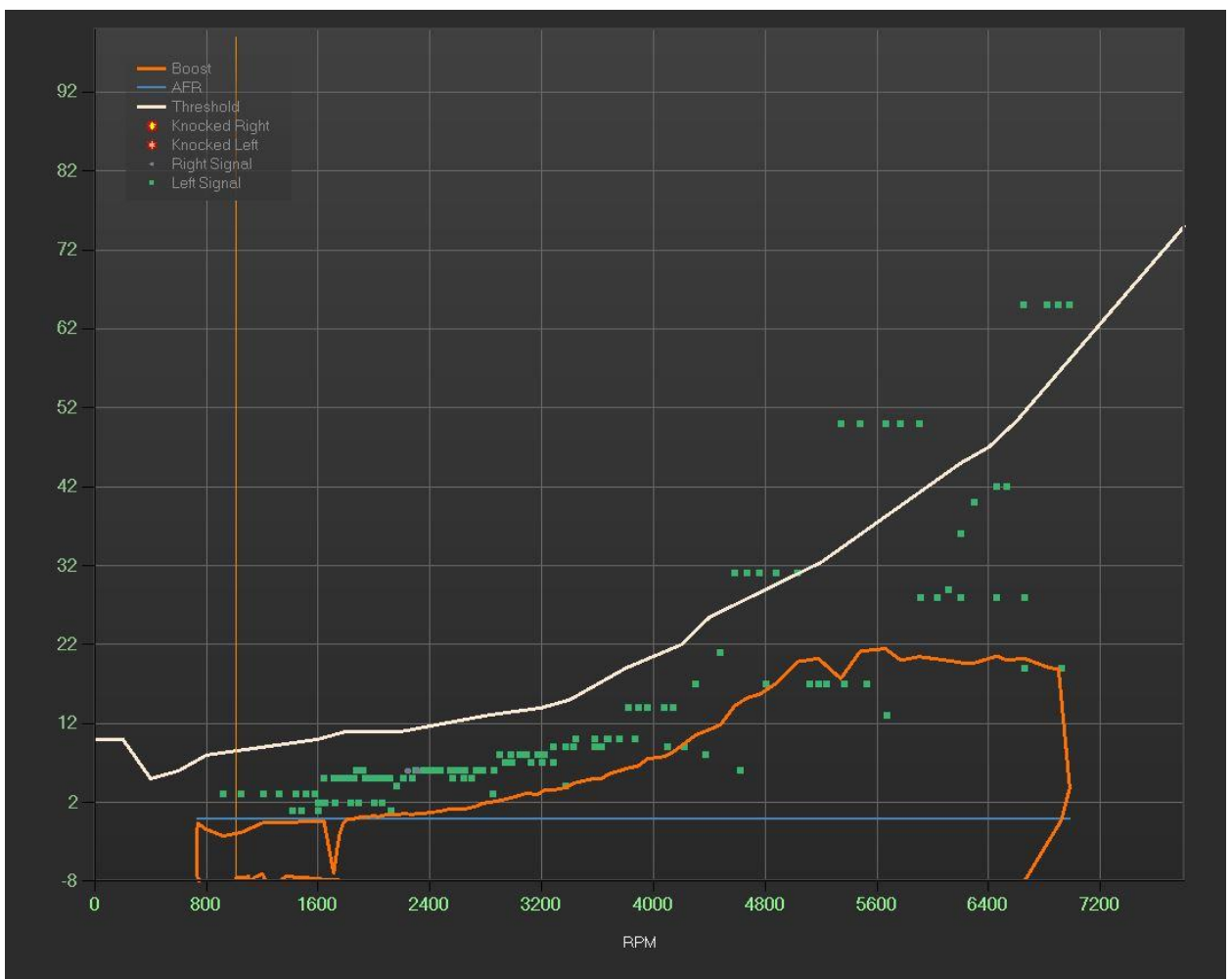


*Notice how the threshold is a margin higher than the green dots? This is how it should be.*

10. If your log has **knocks**, setting the threshold will appear as an erratic line as shown below:



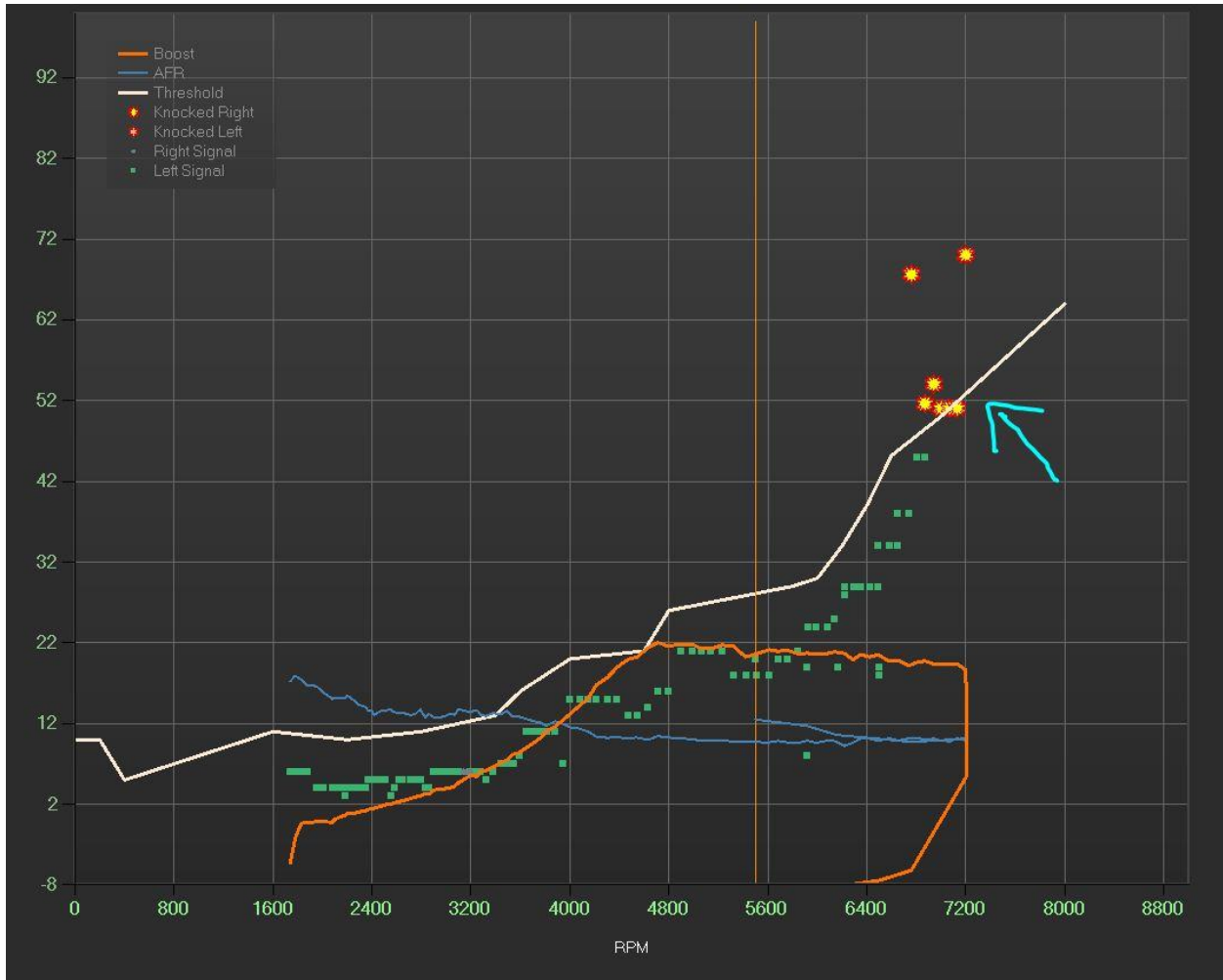
However, all is not lost. Notice how the combustion volume increases progressively between 2400 and 4000-4500 RPM? Your log should display something similar. Using your mouse, click and drag the white line back towards a more predictive path as below:



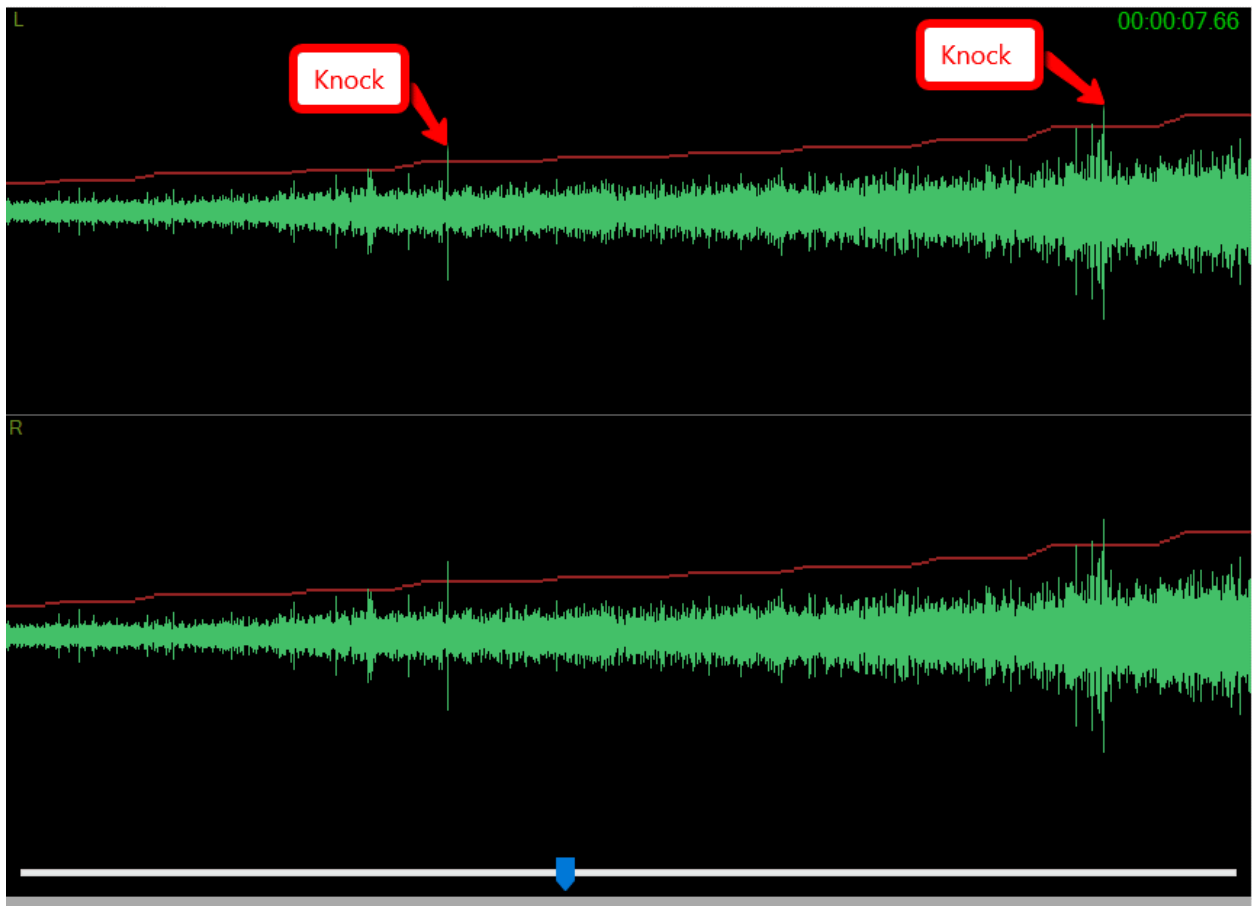
Your threshold *for this car* has been set. You can save this setting by click on **File>Save Config**.

## Identifying Knocks

Knocks will appear on the graph as orange stars above the threshold. The software will pretty much use the threshold set to determine what is knock from regular combustion.



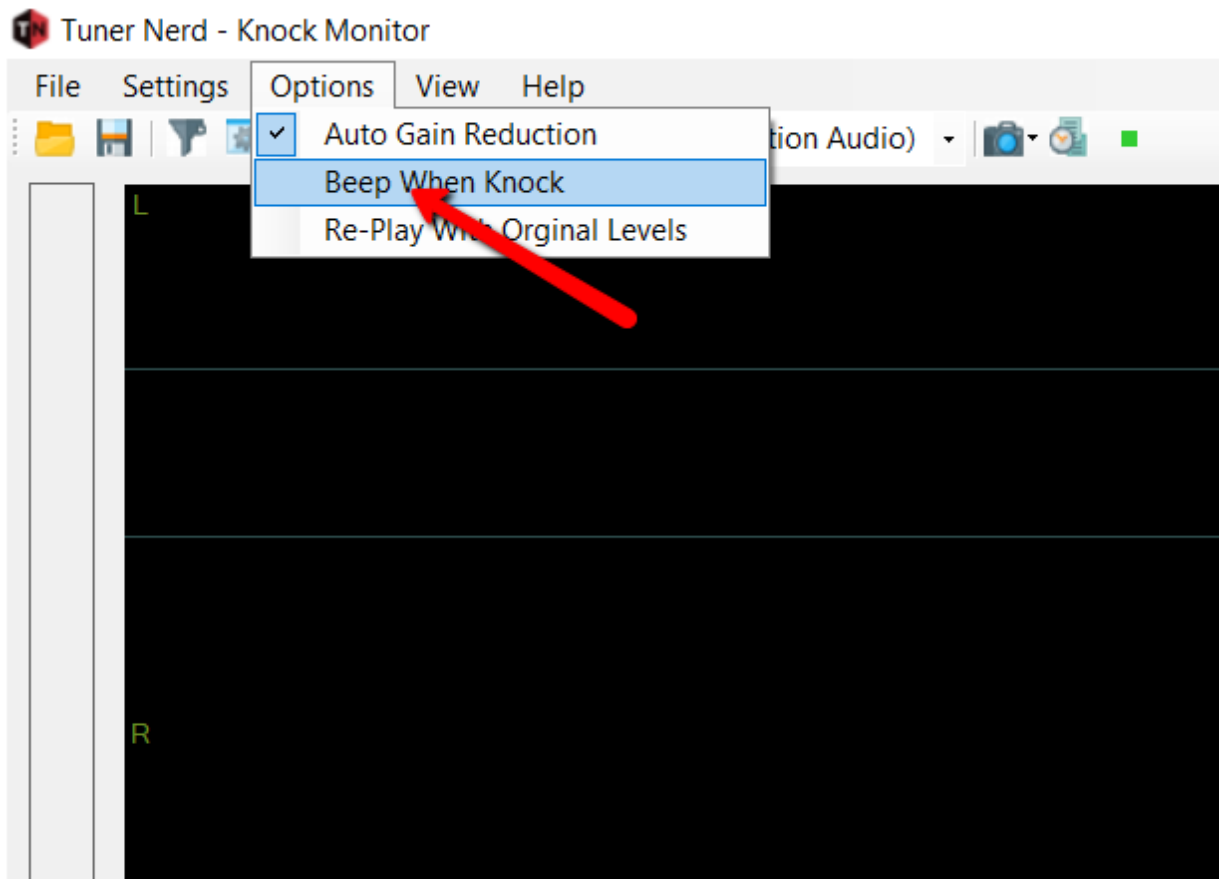
Outside of what the chart shows, you can still identify knock using the waveform view. Knock spikes will jump above the threshold line. Look for spikes in the waveform as is displayed in this photo:





## Audible Beep When knocking

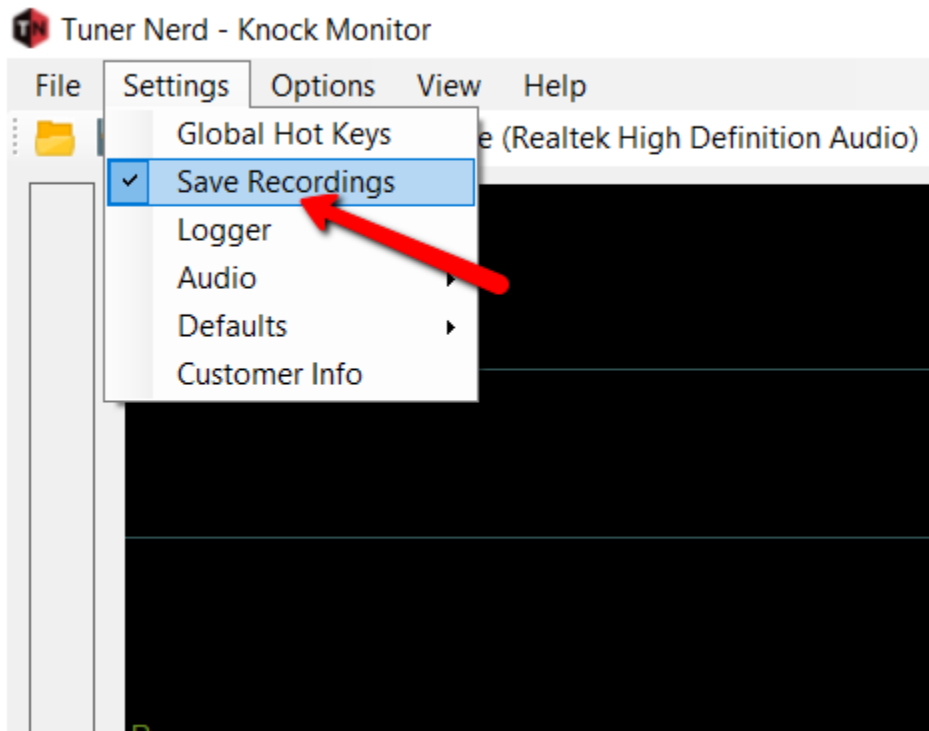
Knock Monitor Pro can produce an audible beep whenever knock is found during a log. Check the following menu option to enable.



## Save Recordings

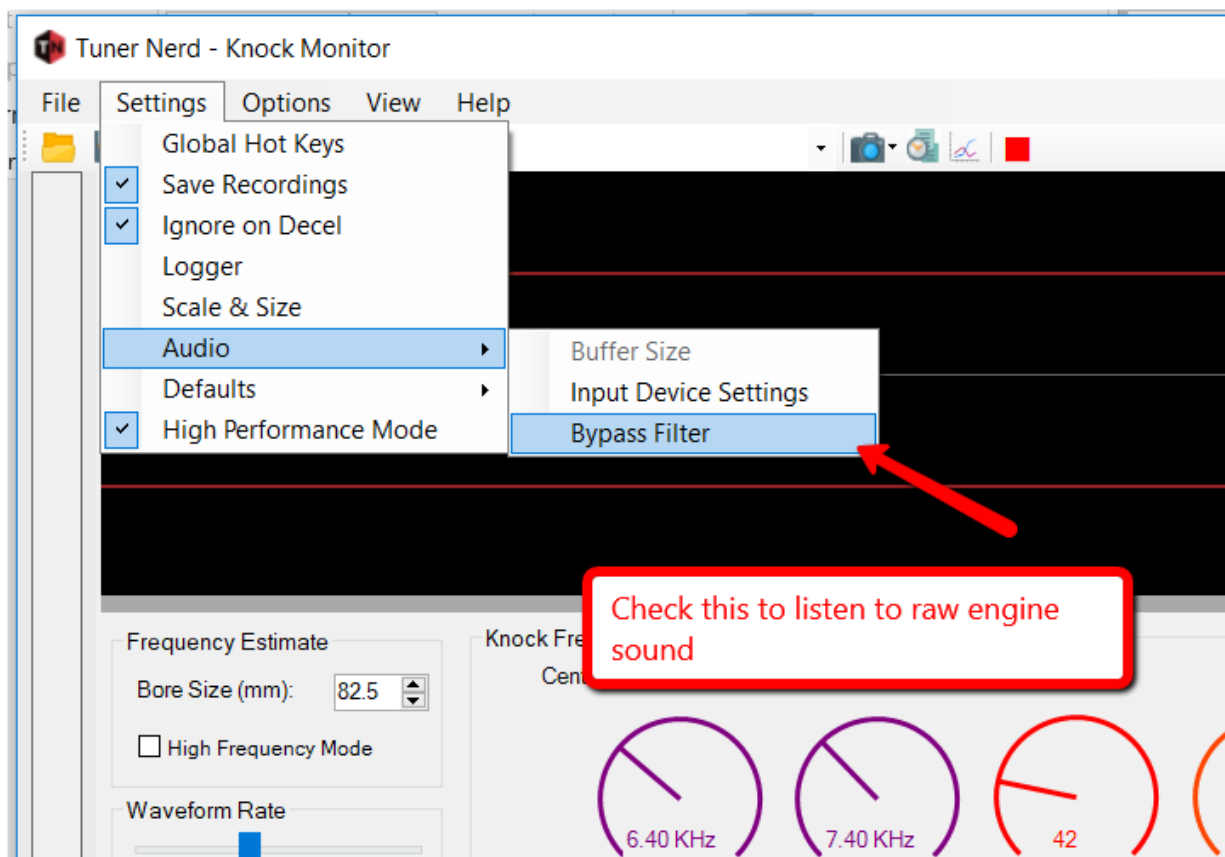
By default, all recordings are saved to My Documents folder\Knock Monitor Pro

Optionally, you may choose to log without saving the sound files. Uncheck the following menu option to set that preference.



## Bypassing Audio Filter

You may be interested to hear the unfiltered audio as it is from the knock sensor. You may disable the filters as follows:



## Sound Troubleshooting

**Problem:** I'm seeing the green dots but not getting any audio or waveform.

- a. Close software  
Remove then reconnect USB  
restart software

**Problem:** I'm hearing a ticking noise that sounds like the injector.

- b.
  - i. V3 Device: Ensure you keep the device and laptop away from ignition (for eg: coil packs) and induction sources.
- c. Some amount of ticking is normal, as the engine is revved higher it will dissipate
- d. Contact us via the [facebook](#) page if problem persists.

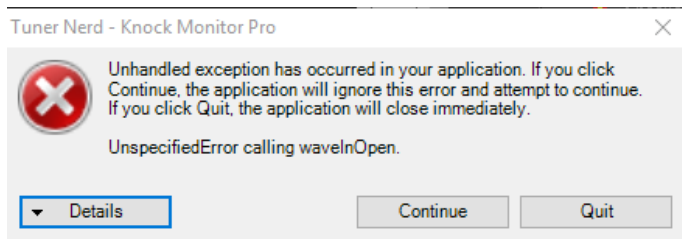
**Problem:** Not hearing engine, not seeing any sound indication on screen

- Check to ensure the right sound device is selected.
- Check connection between device and knock sensor

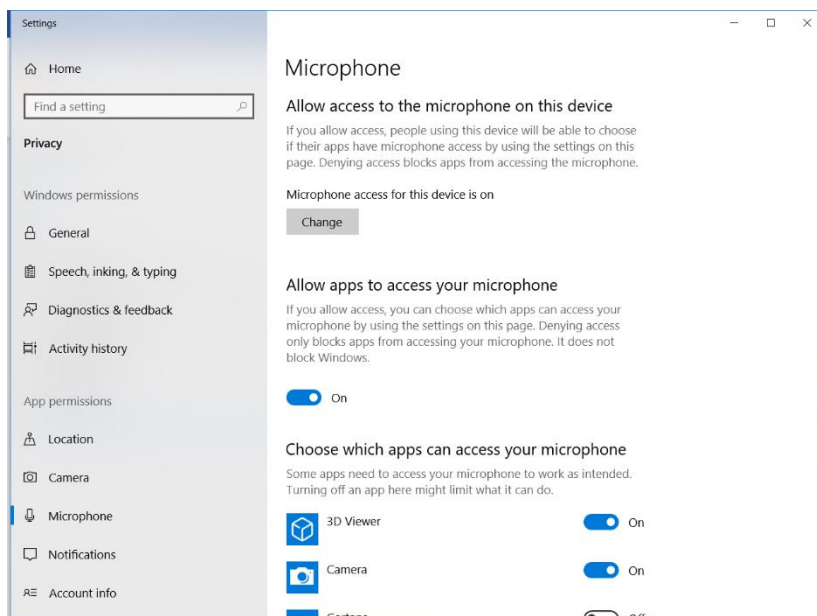
**Problem:** I'm seeing sound indication on screen, but not hearing anything

- a. Check to ensure your headphone is plugged into the default windows playback device
  - a. If you headphone is plugged into the same device as your knock sensor / TKM, then use Windows to set this device as your default playback device.
  - b. Check the sound mixer volume in Windows

**Problem:** I get this error message:



- a. This can be attributed to a microphone privacy setting. Go to start menu and type *Microphone privacy*. Allow all apps.



The setting should look like this.