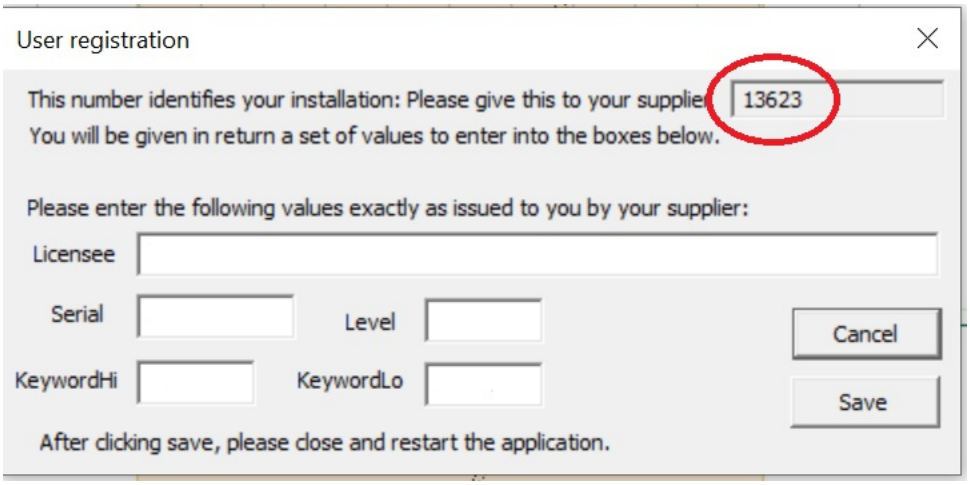
eTimer Setup and First Use Hints

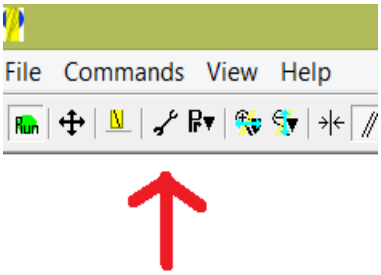
1. Uninstall any other eTimer version you may have downloaded from the Delph website for evaluation.
2. Run the **eTimer.msi** file supplied on disc or emailed and follow the prompts. If emailed, the extension will first have to be changed from ".dat" to ".msi". If you cannot see the file extensions, search the web for "how to show file extensions in WIN##" (for your appropriate operating system).
3. The eTimer shortcut will now be on your desktop.
4. Start the program. You will see at the very bottom of the page ***INVALID* SN20000. Demonstration**. This means the software is a non-functional copy, that will only run for 5 seconds.
5. From the top line select **HELP > Register Product**. The **User Registration** window will open.



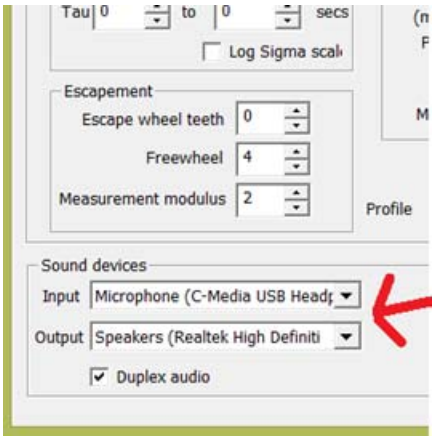
6. If it is the first time you have loaded on this computer, you will need to provide your supplier with the number shown in the top right of the window (circled red).

They will then provide the code numbers to populate the other missing fields. The syntax must match exactly and is case sensitive.

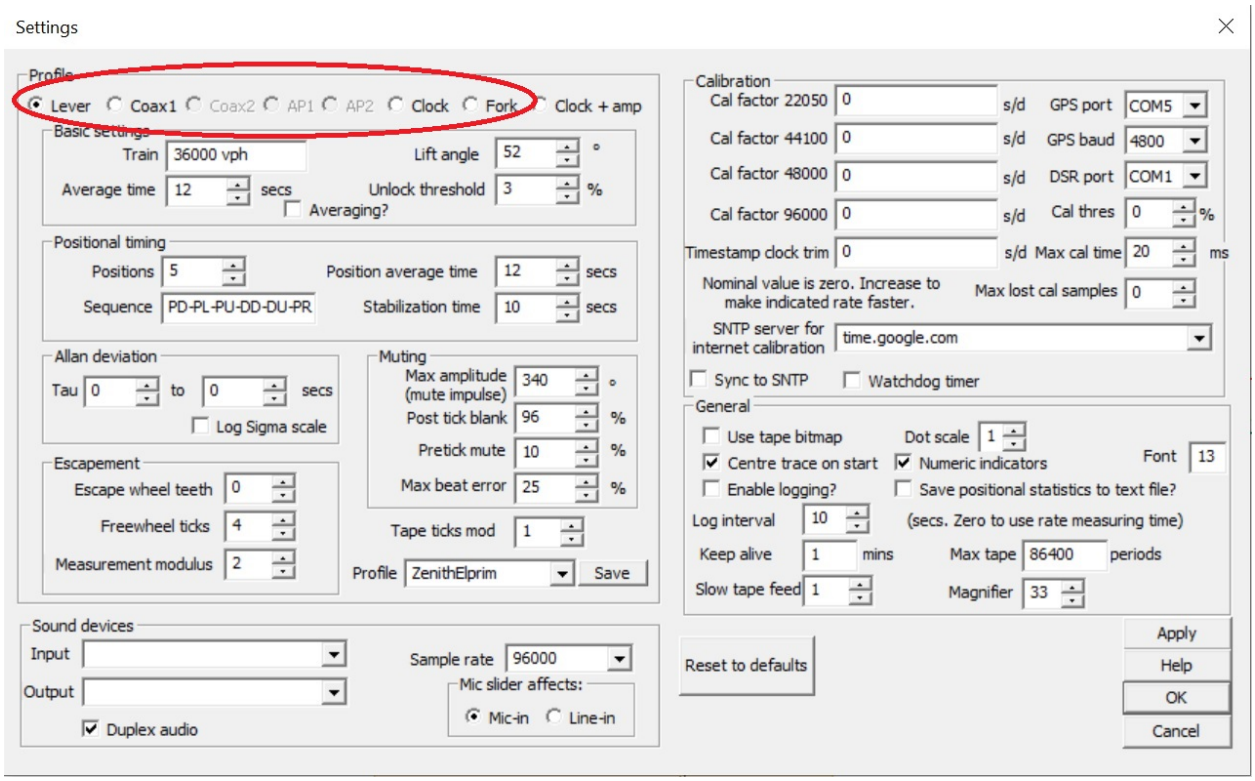
7. So, enter the numbers, **Save** and restart. Your Licensee ID and serial number will now appear on the bottom line instead of the ***INVALID*** statement.
8. The program will now be functional. If you haven't already, insert the supplied USB sound card into your computer then plug the microphone into the pink socket (the green is for the earphones, discussed later). Make sure the **Run** button is pressed. Tapping the space bar also toggles **Run** on/off. Lightly tap the clip. If there is no band of noise or it does not show any spikes as you tap, the software is not yet seeing the input signal, so proceed as follows.
9. Click on the small wrench on the toolbar. This opens the **Settings** page, shown in full on Page 4.



10. From this window, all sampling parameters can be customized. Look at the bottom left of the window, you will see **Sound Devices**. Select the microphone from the dropdown, and the output if it is blank. Hit **Apply** and **OK**.

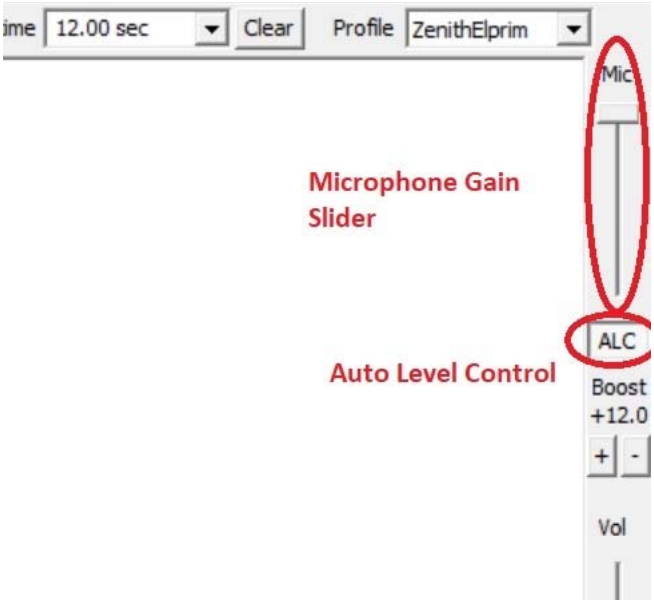


11. In some instances, I have had users report the need to disable their built-in microphone as the ambient signal is added to the clip mic. If you have an issue on a WIN10 machine, here is a link. https://www.techbout.com/turn-off-disable-microphone-in-windows-10-25300/. If you need help with a different operating system let me know.
12. Now when you tap the microphone, you should see random spikes and hear them through the speakers, but turn the speakers down after this test as they can cause interference if the clip mic picks up that additional tick sound.
13. We now need the watch or clock to be analyzed, but first the program has to be told what you are trying to time. There are buttons on the main toolbar to select, or you can go back to the **Settings** window. At the top left under **Profile**, you will see several options, including **Lever**, **Coax** and **Clock**. Select the appropriate device. **Lever** covers most wristwatches, and **Coax** is for the Omega (George Daniels) coaxial escapement.

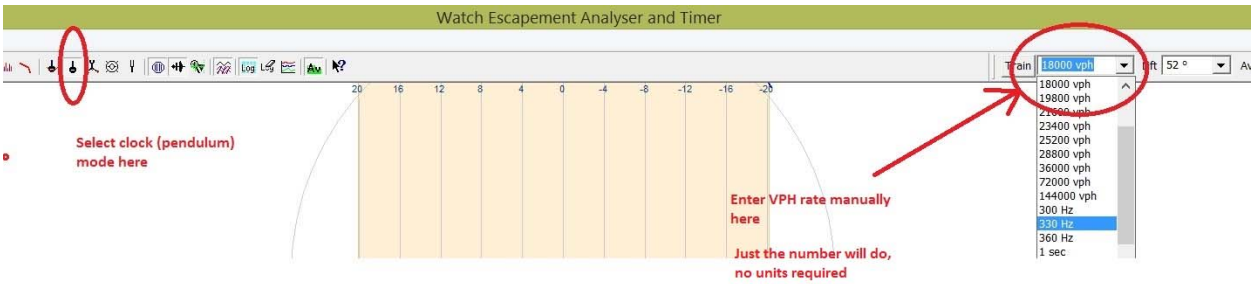


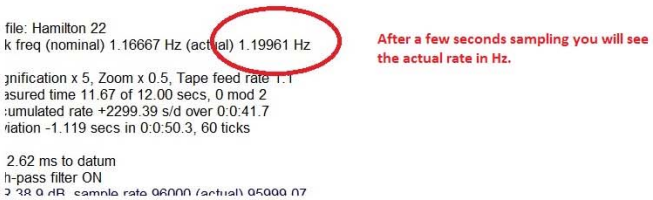
14. You will now see the ticks showing in the waveform, but the analyzer may not yet be synchronized to the correct nominal rate. On the top right you will see **Train, Lift** and **Average Time**. For watches, just press the **Train** button and the system will automatically scan down from 36000 vph until it locks in on the rate of your particular timepiece.

You will then see the trace being drawn on the recorder, with the rate etc showing on the right. The height of the waveform is adjustable with the **Mic** slider on the far right of the screen, but with the **ALC** auto level control activated, the software will adjust for the best result.



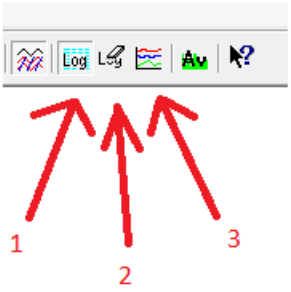
15. For clocks, select the **clock / pendulum** mode. eTimer cannot auto detect the slower pendulum rate so it has to be manually calculated and entered. There are so many variations out there that a fast X vph can overlap a slow Y vph etc. You can calculate by counting the teeth on the appropriate train wheels if you have had the clock dismantled on the bench, or alternatively by counting the ticks relative to the graduations on the dial, not real time. If you count to real time, you may end up adjusting precisely *to the wrong rate !* So once determined, enter the nominal train rate by highlighting the **Train** field and typing the value (no units required). You will then see the trace being drawn, and after a few seconds of sampling, the actual frequency. This is a useful check if by chance you have miscalculated the vph.





It is not unusual to see the rate in an apparently precision pendulum clock fluctuating quite alarmingly when viewed in the short term. The best results are gained by running the data log over several hours.

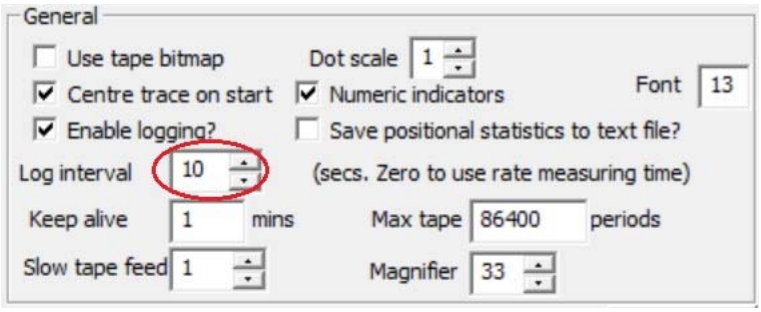
16. **Data logging** – To record the performance over time, go to **File > Enable Logging** and check the box (if it not already). On the same dropdown, select **Choose Log File**. This is where you name the file, ie Hamilton 12-5-15 or suchlike, or you can select an earlier file you wish to review or print etc. These files will by default be placed in your **Documents** folder. If you look at the toolbar, you will see **LOG** (Button1), so press that if it is not already.



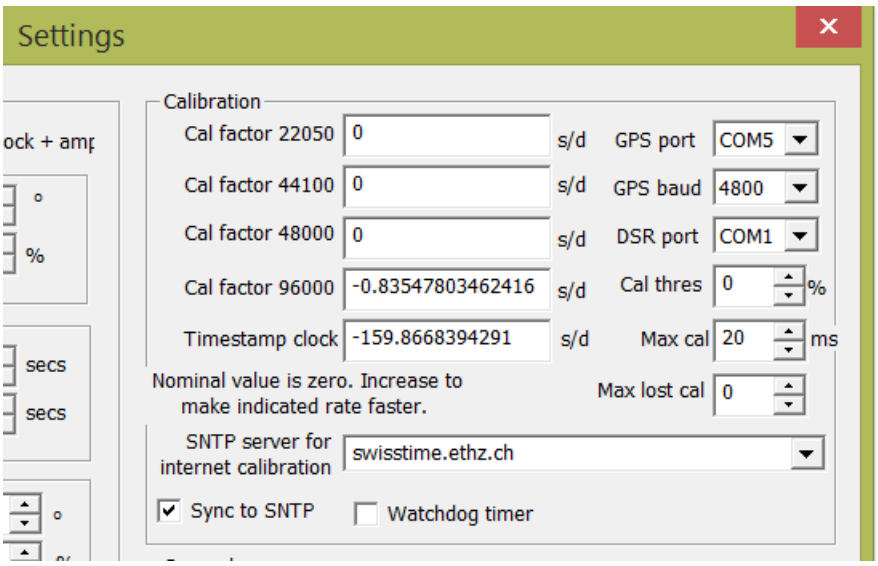
Button 2 clears an existing log. The system will

then start collecting data. To view it, click on the small graph button 3. This opens as a separate window and will start being populated as data is collected.

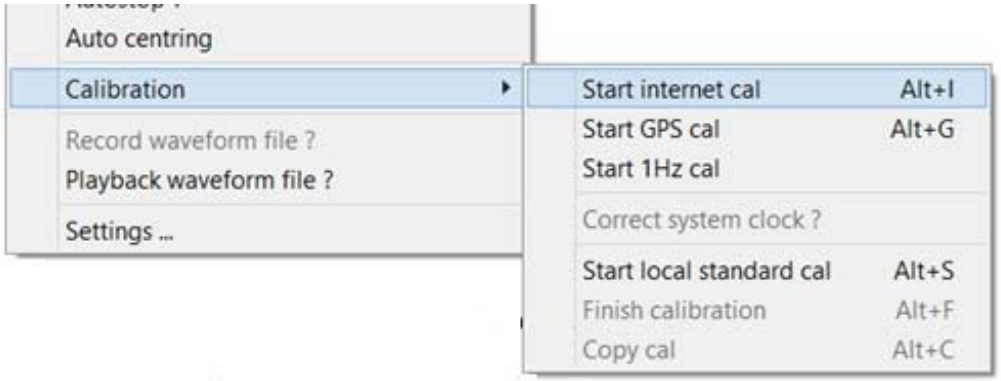
The sampling rate can be changed. When the **Log Interval** is set to Zero as shown below, a data set will be saved at the end of each averaging period, for example 30 seconds. You can change it to any whole second value manually.



17. **Calibration** – The system will need to be calibrated for optimum accuracy. The Internet cal is the most common method using Simple Network Time Protocol (SNTP). From the Settings page, select the website of your preference, ETH Zurich is shown in the example, but "time.google.com" is a good one.



Select from the main header **Command > Calibration** and (in this case) **Start Internet Cal**.



The system will then contact the server selected and begin the process. You will see updates on the screen periodically.

SNTP Ok, Offset = +0.0057
04:05:13 UTC

Time elapsed 00:29:44
Hi-speed clock cal +0.4575 s/d
Cal factor in use -0.1058 s/d
Cal factor suggested -142.1794 s/d
Confidence +/- 0.5341 s/d

Here we see the calibration after only 29 minutes. You can see the suggested factor is huge with a Confidence level of over 0.5 sec/day. It is best to let the Confidence level settle to at least the second decimal place.

The **Cal factor** suggested and confidence +/- will gradually trend smaller and smaller. I generally let it run overnight for a first time cal. When that value is acceptable to you, select **Finish Calibration**. The system will prompt you to select the new rate or return to the original values.

A general note of caution :

The teeth of the crocodile clip microphone can scratch a case or movement if you are not careful, so I always attach only to the stem or crown.

Try to avoid testing in a noisy environment. High background sound will reduce the signal sensitivity. Earphones should be used to listen to the tick without disturbing the microphone (remember the green socket on the USB mentioned earlier).

If you change some settings and find you cannot get a good signal or appropriate waveform, hit the **Reset to defaults** button in **Settings** and that will get you back on track.

These notes are a brief introduction to get you started, and are just a supplement to the copious information already in the help files. Said files are useful to read through even if you don't actually need help. I will always be available for support, and what I don't know I will find out for you promptly.

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