



User Manual – v1.0



14390 Carlson Circle
Tampa, FL 33626
+1 (813) 855-8687

zAP1 User Manual – v1.0

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About

This doc describes how to use the new features of zAP1 spectrometers.

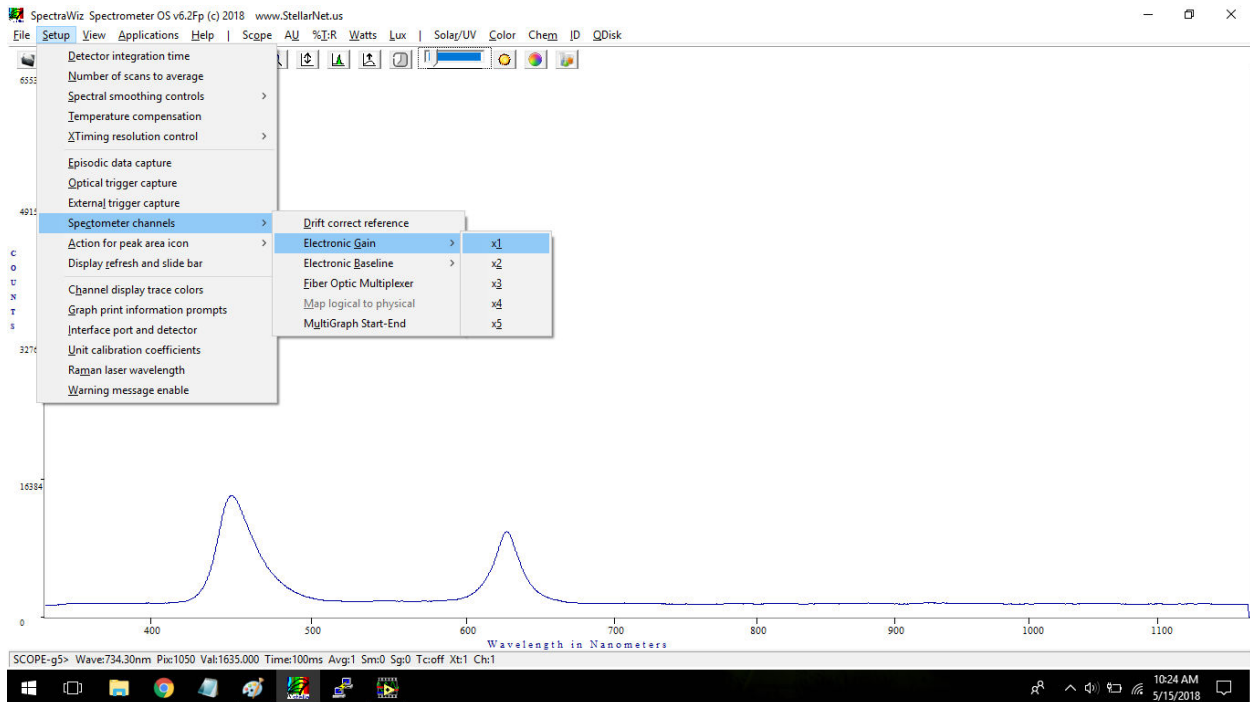
NOTE: The following menu options will only appear if a zAP1 board is connected to SpectraWiz, otherwise these options won't be available.

1. Gain adjustment

Gain menu

Signal gain on zAP1 boards can be adjusted in a ratio of 1:1 to 1:5, making the signal bigger at bigger gains.

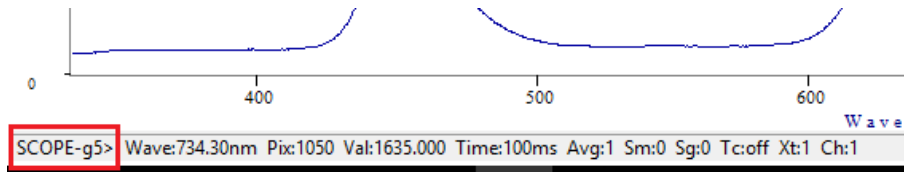
Go to **Setup->Spectrometer channels->Electronic Gain** to select each gain (x1 to x5) as shown in the figure or use the following *hotkeys*:





Gain indicator

You can check the current gain setup in the status bar at the bottom of the window (*g#*)



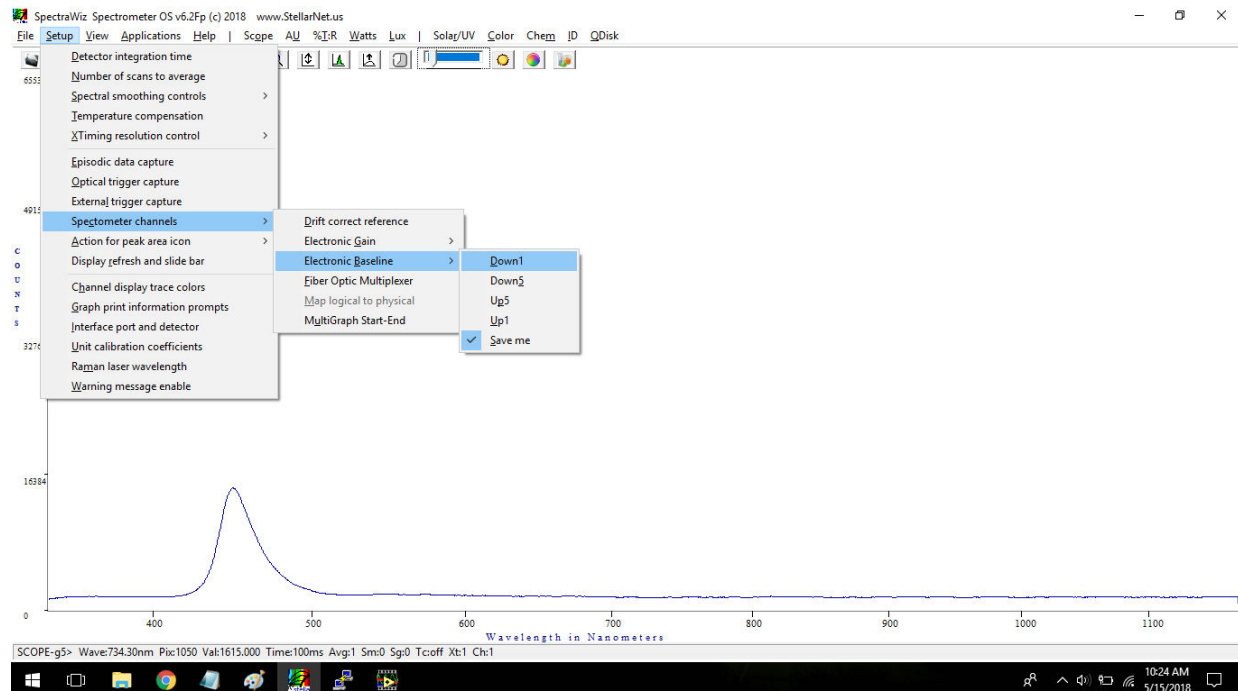
2. Baseline adjustment

Baseline menu

If the baseline of your signal is higher or lower than expected, you can adjust it by using the baseline menu: **Setup->Spectrometer channels->Electronic Baseline**, or use the following *hotkeys*:



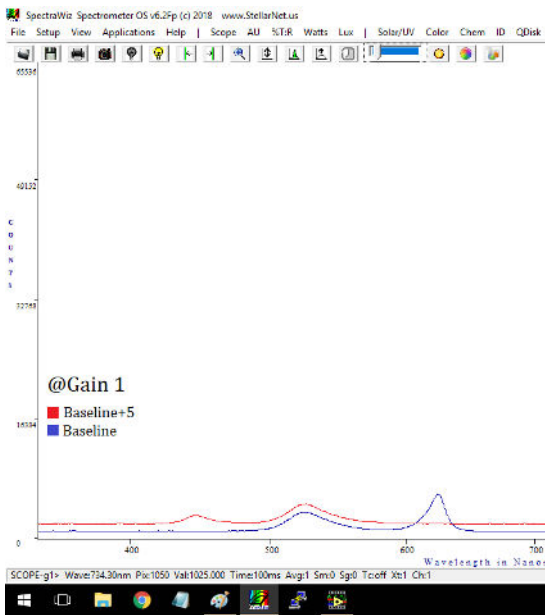
You have 4 different options to manually adjust the baseline:



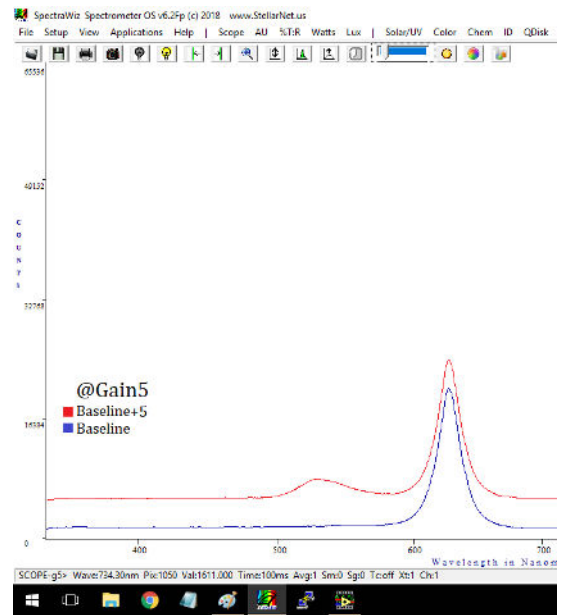


- ✓ **Down 1** Move baseline down by 1 step/count
- ✓ **Down 5** Move baseline down by 5 steps/counts
- ✓ **Up 1** Move baseline up by 1 step/count
- ✓ **Up 5** Move baseline up by 5 steps/counts

NOTE: 1 step/count at gain 1 is smaller than at gain 5.



Baseline up 5 @ gain 1

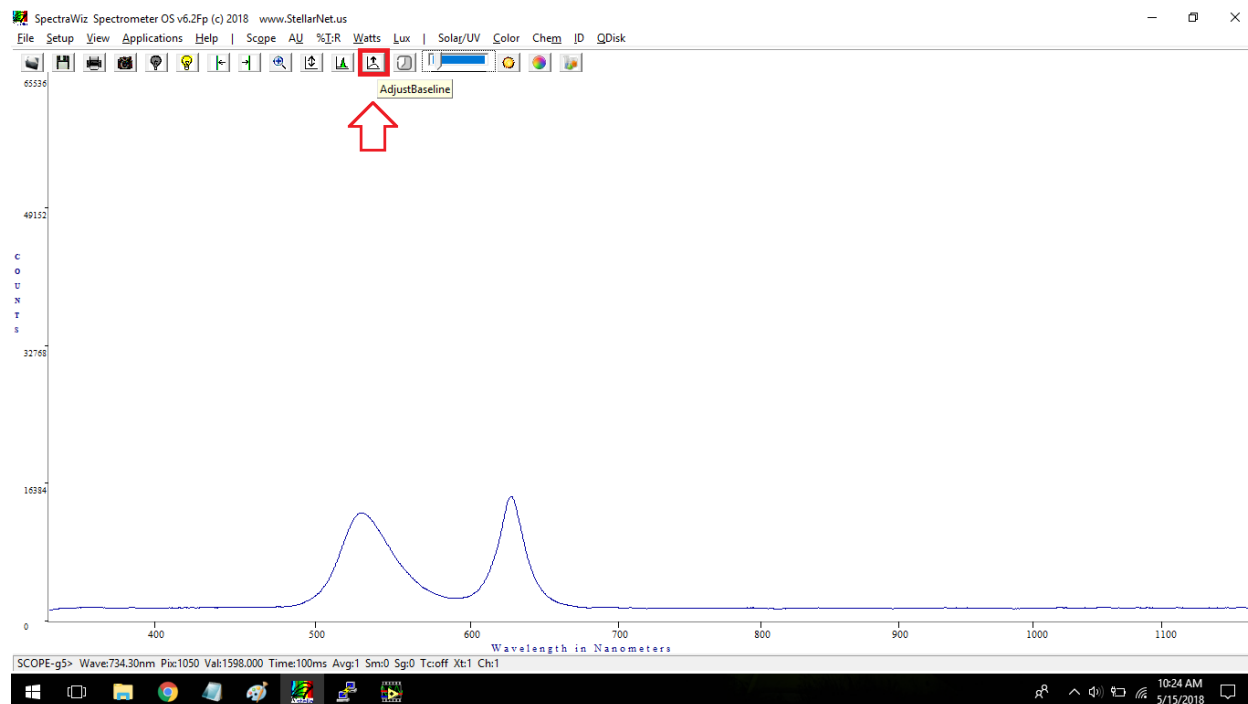


Baseline up 5 @ gain 5



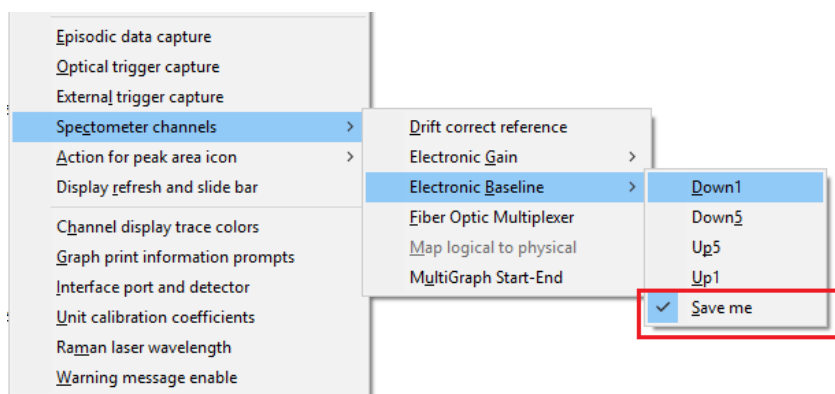
Auto-adjust Baseline

Instead of adjusting the baseline manually, you can use the **Auto-adjust baseline** tool  (*AdjustBaseline*). This function will try to bring up/down the current baseline to a standard value.



3. Save baseline values

Once all desired baselines for each gain have been set, you can save them to the spectrometer by selecting the “*Save me*” option in the Baseline menu.



This will save all values to the Spectrometer memory, so next time you plug it, all the baselines will come up with the saved values.



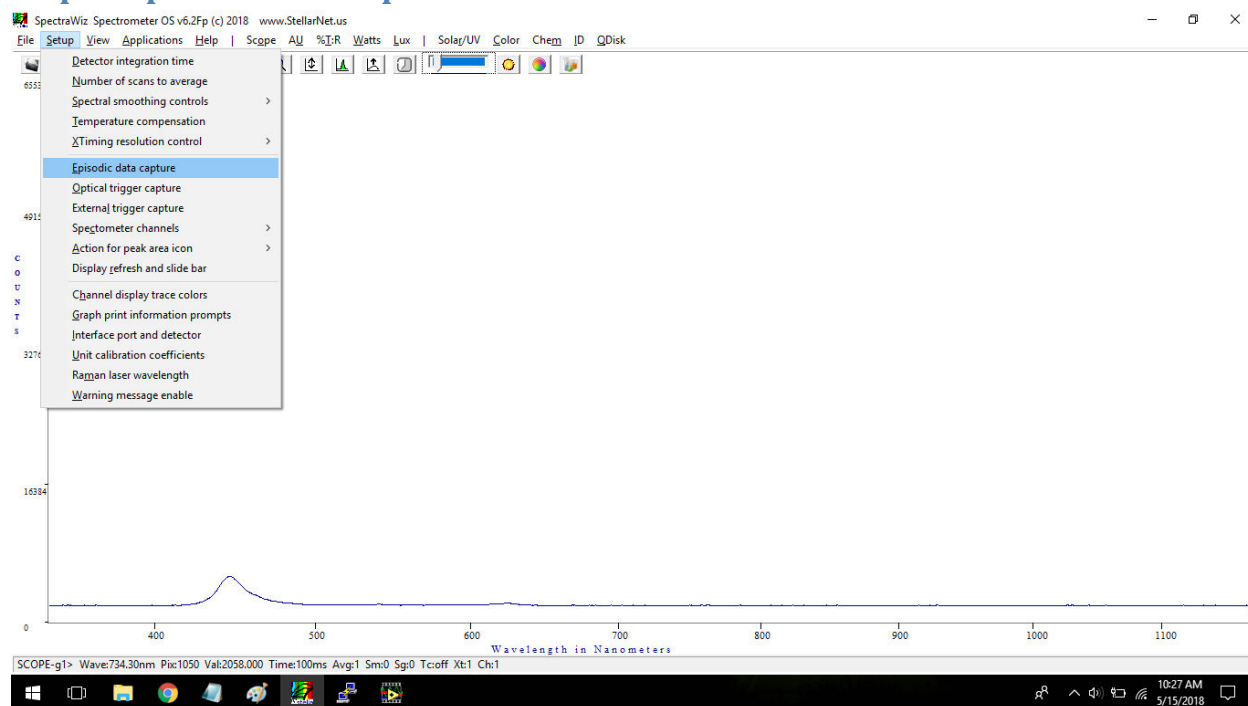
4. Burst mode

By using **Burst mode** you can collect 128 spectrum one after the other at the configured integration time. **This feature is recommended for integration times shorter than 30ms.**

Go to **Setup->Episodic data capture**



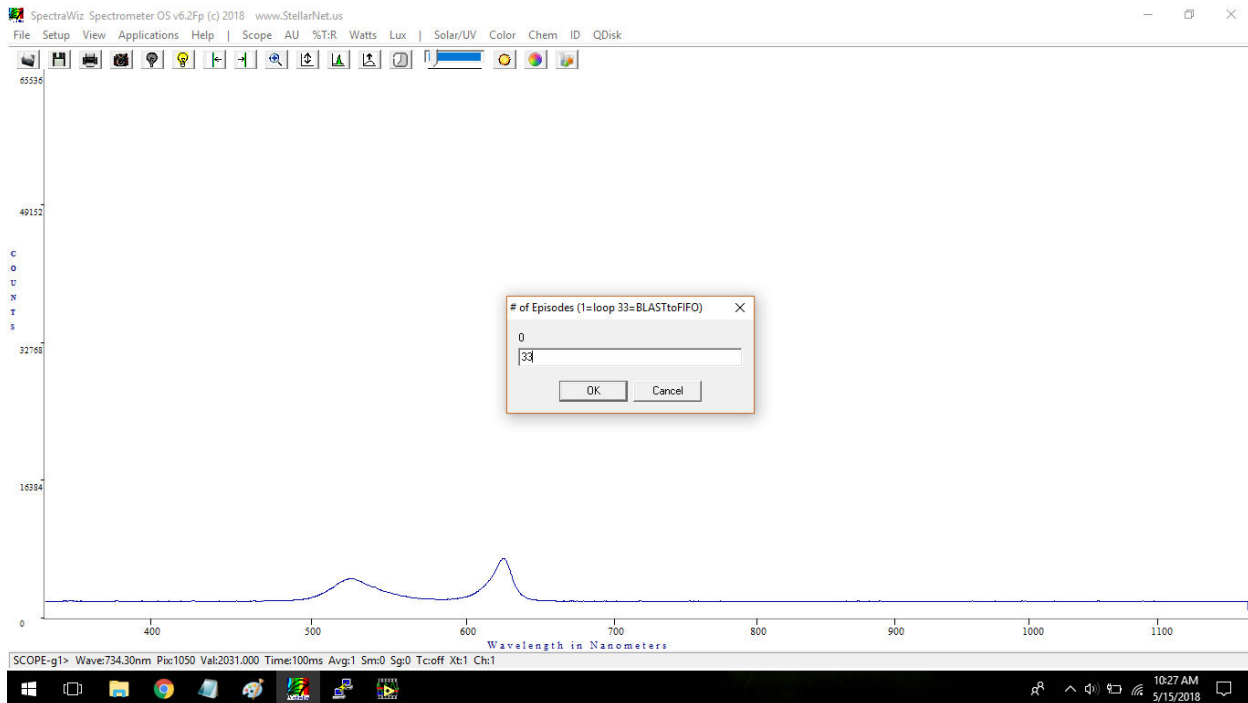
Step 1: Episodic data capture





Step 2: Option 33 (Burst Mode)

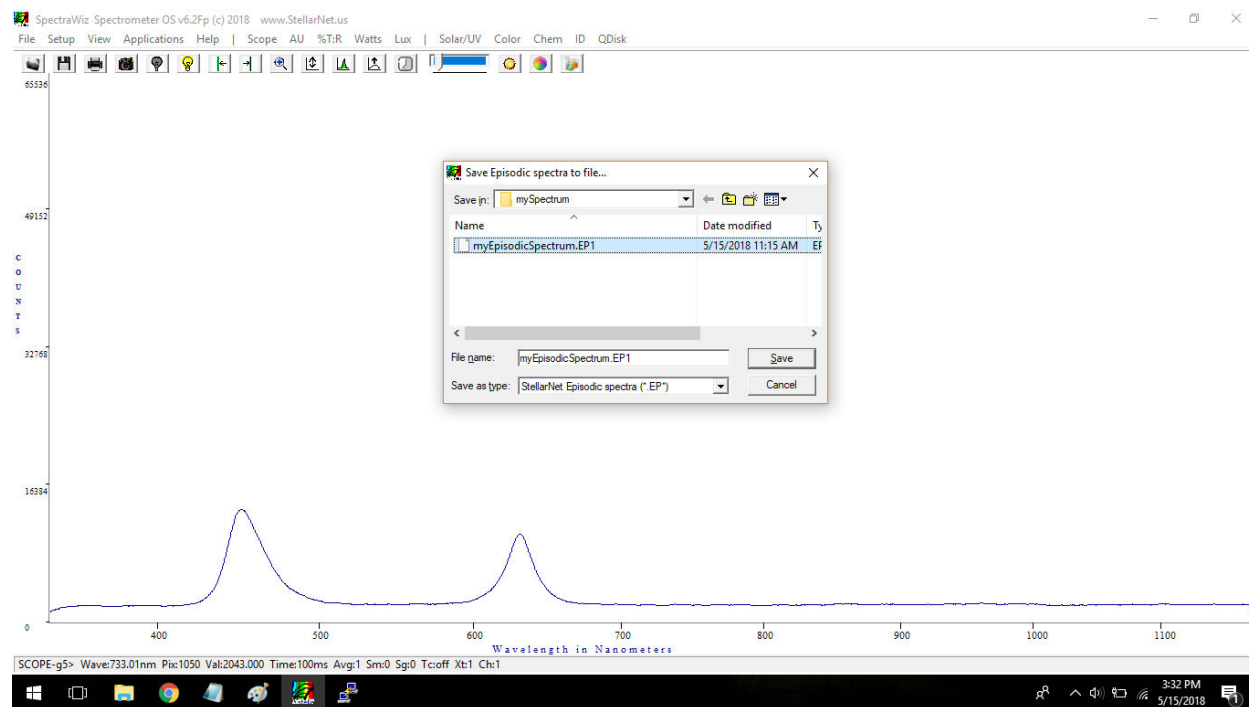
Choose option **33** (Burst Mode) and hit “ok”:





Step 3: Save to file

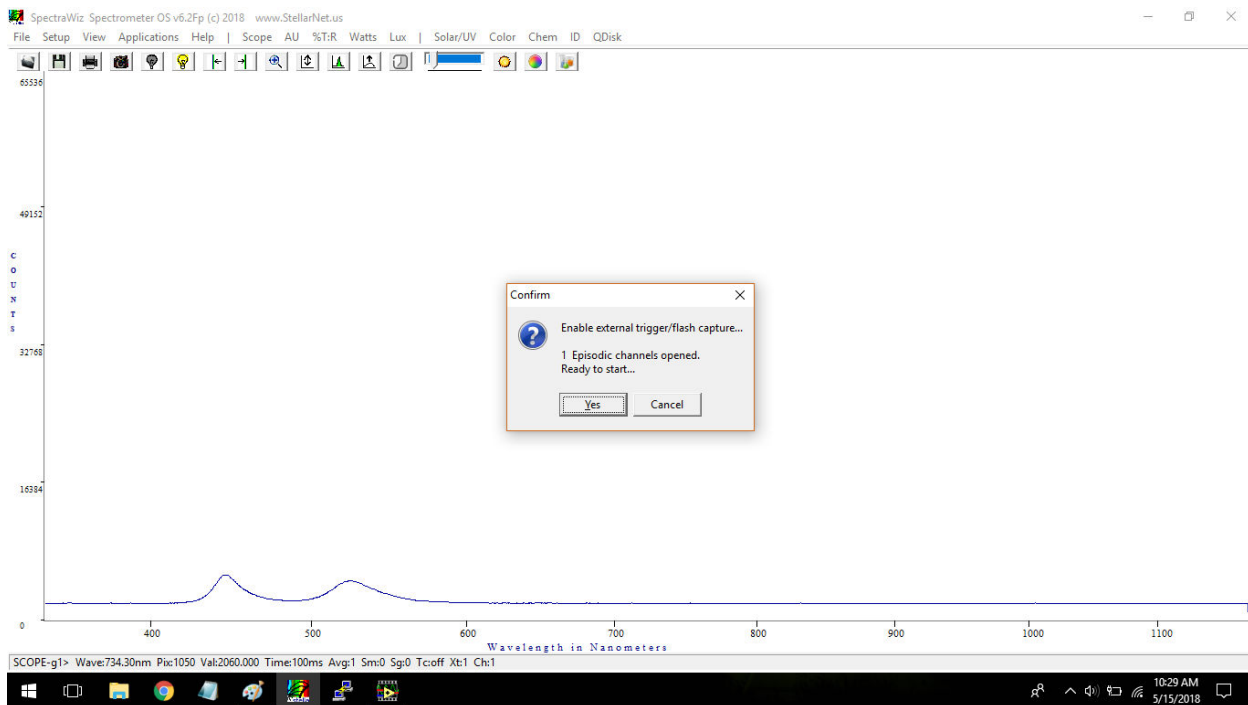
Type the filename for the stored spectrum and hit “save”





Step 4: Start Episodic capture

When your system is ready to start just hit “yes”:

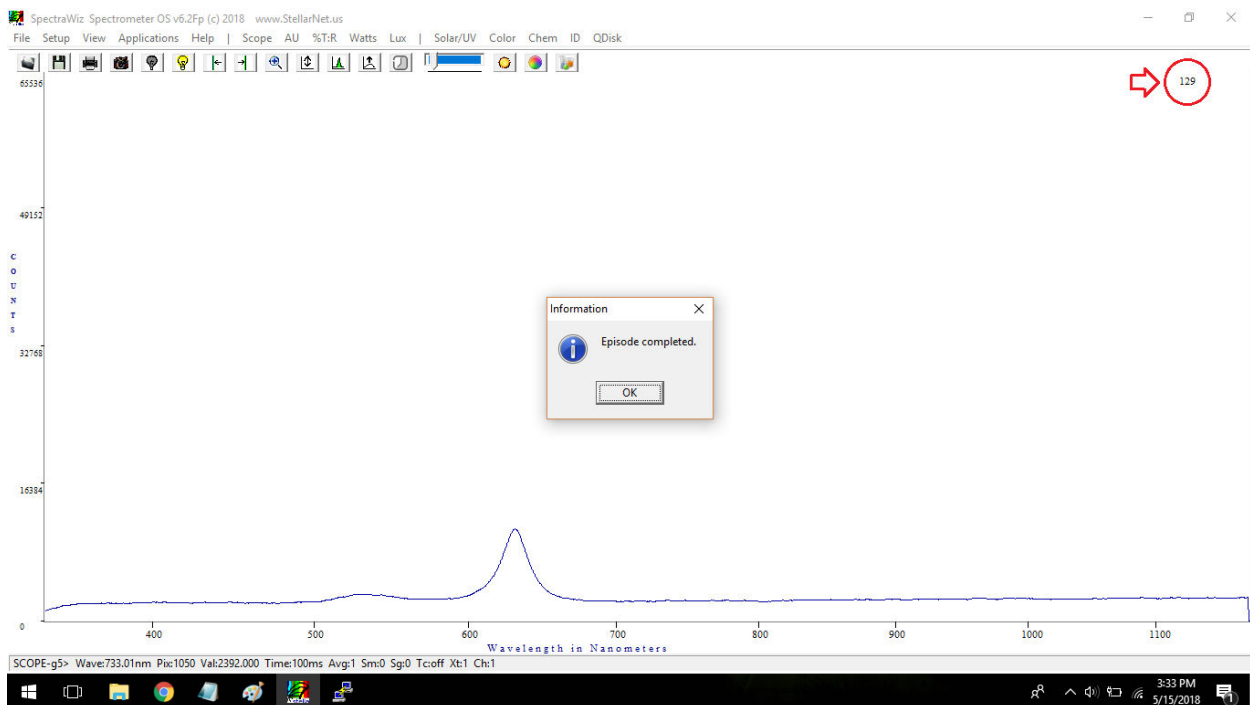




Step 5: Episodic complete

The spectrometer will start collecting data and save it to memory. When all 128 spectrums are saved, it will send it to the specified file.

You will see the confirmation message and the number of counts in the top-right corner of the screen.





Step 6: Open results

Now you can process the results like every other Episodic Capture file, for example, to read all spectrums at a time go to **File->Open** and select the “.EP1” file previously saved.

The following image shows an example of how the result should look.

