User manual for Spectro (Estonian Physics Institute)

Spectro is application for showing real time changing graphs. Data source is a file, specified by the user. Spectro is able to convert data to ASCII XY format.

Commands:

Most of the user input comes from toolbar (which is duplicated as the menu).
Special function *Convert* is available only in the menu.
Special function *Automatic mode* can be switched on only from the toolbar.

 Open – opens input file if possible. It <u>do not</u> start reading the file. So no graph will be drawn and no data will be read. You can see the filename you opened on the status bar. You can open only one file. Already opened file will be unloaded after opening another file.

 Scan – If a file is opened already (you can see if the filename is on the status bar), then program starts reading the file and showing the graph.
But if the file is not opened before then you have to choose a file at first and after that Spectro starts reading the file and showing the graph. Most of the functionality is disabled while the program is *Scanning.*
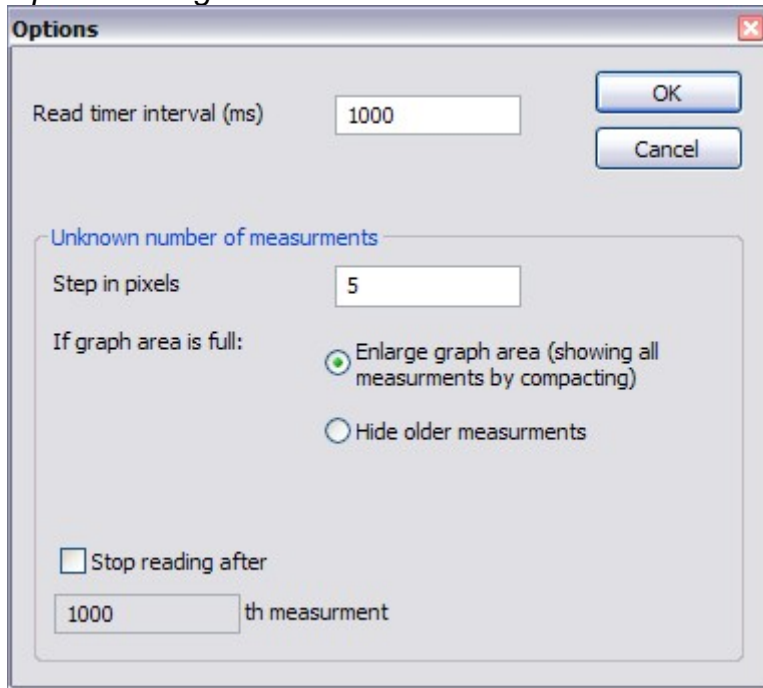
 Stop – Stop button is active only if the program is *Scanning.* It stops reading the file, but <u>do not</u> unload it from memory. All graphs remain as they are and nothing will be deleted from the memory.

 Options – Shows options dialog box. Function is available only if the program <u>is not</u> *scanning*.

Options dialog box:

Timer interval – shows the scanning period in milliseconds. It should be less than the file writing period (i.e. some other program writes data to the file in every 100ms, then *Timer interval* should be at least 100ms, preferably less than 100ms).
Keeping *timer interval* very low (i.e. 10ms) <u>do not</u> affect system performance remarkably.

Step in pixels – Shows width of one measurement (in pixels). By changing this variable it's possible to narrow or widen the graph.

If graph area is full – if enlarging the graph area is chosen then graph will be compacted 10% after becoming full. Otherwise older measurements will be hidden.

If *stop reading after* is checked then program stops reading automatically after specified number of measurements. The file won't be unloaded and the graph remains as it is.

 Help – no help file added to the program yet.

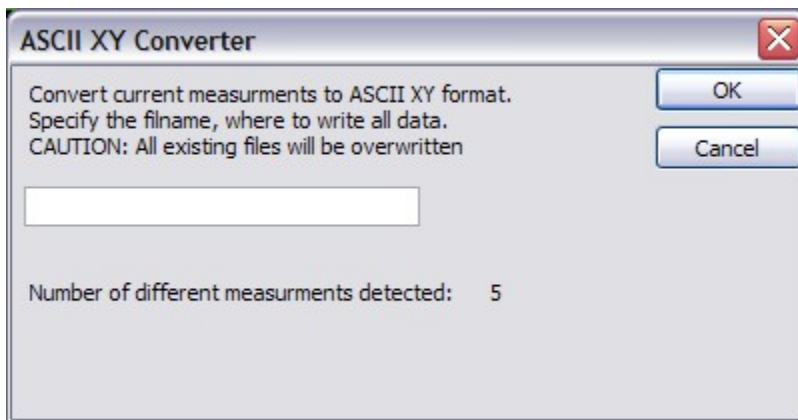 *Quit* – Stops reading (if necessary) and closes the application.

Automatic mode – This button can be switched ON or OFF. It is possible to switch it ON only if program is not *scanning.* If the function is switched ON, *open, start scanning, stop scanning* will be disabled. The program automatically checks for input filename (from **input.inf**). If correct filename is written to input.inf, *Automatic mode* will be switched off and the program starts scanning from the file. If incorrect filename is written to input.inf, the program will give a warning and *Automatic mode* will be switched off.

After finding <u>any</u> filename from input.inf, contents of input.inf will be deleted.

NB!! After switching ON *automatic mode,* all graph data in program memory will be erased and any loaded file will be unloaded.

Convert – Opens convert dialog box, where is possible to convert <u>loaded</u> data to ASCII XY format.

ASCII XY Converter

Convert current measurments to ASCII XY format.
Specify the filname, where to write all data.
CAUTION: All existing files will be overwritten

OK Cancel

Number of different measurments detected: 5

User has to specify the filename. Postfix of those files will be a number and .txt Number depends on amount of different measurements which has been scanned simultaneously. Files are replaced to ASCII_XY folder.

Scaling and measurement number

Lower limit   Upper limit

Update limits   ☑ Autoscale   Measurement number:
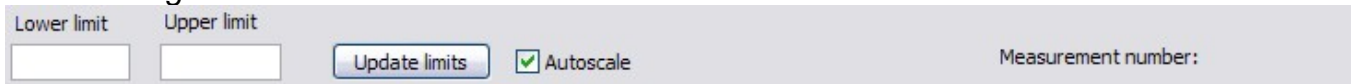
Lower and upper limit specify the vertical range of the graph. It's possible to switch ON automatic scaling by checking *autoscale*. To specify lower and upper limits, correct values must be entered (upper must be larger than lower) and *Update limits* must be pressed.

Measurement number shows the number of last measurement (last measurement is placed on the right side of the graph).

General guidelines how to use the program (with Andor MCD, using Spectro.pgm):

1st way (generally more comfortable):

- Open Andor and load Spectro.pgm (located at C:\Spectro) from File->Run program by filename
- Open Spectro.exe (C:\Spectro\Spectro.exe). <u>Switch ON</u> *Automatic mode*.
- Go back to the Andor and to start Spectro.pgm click "run" button on the toolbar. After that filename will be asked. Write filename and click OK.
- Go back to the Spectro and you should see the graph. <u>If there are some kind of problems (graph doesn't seem to be real time), try to change options (i.e. **decrease** read time interval).</u>

2nd way (more general)

- Open Andor and load Spectro.pgm (located at C:\Spectro) from File->Run program by filename
- Open Spectro.exe (C:\Spectro\Spectro.exe)
- Go back to the Andor and to start Spectro.pgm click "run" button on the toolbar. After that filename will be asked. Write filename and click OK.
- Now go back to the Spectro.exe and click on Start scanning button. Then you have to open a file. Choose the same filename you wrote before. (It should be in C:\Spectro) Click OK and you should see graph. <u>If there are some kind of problems (graph doesn't seem to be real time), try to change options (i.e. **decrease** read time interval)</u>

In case of problems

Ensure that:

- Andor's exposure time is larger than *read time interval*
- Andor created your specified file to the Spectro folder (C:\Spectro\ for us)
- Graph's vertical range fits to our measurements (in case you are not able to see the graph)