



## **palmGRAPH Software Manual**

### ***Overview:***

This is a software application designed for compatible Digital Geiger Counters for the purpose of recording and graphing radiation counts over time. This software is especially useful for monitoring environmental radiation, alerting you to any elevated levels relative to your typical background count. As a full Windows program, it can optionally run in the background while you multi-task, notifying you only when your pre-determined Alert Level is exceeded by actual radiation counts.

### ***Set Up:***

To read from your Geiger counter, plug the slender 3.5mm stereo plug end of your data cable into the data output port of your Geiger counter, and hook the 9 pin RS-232 connector at the opposite end of the data cable to the serial port of your computer. The program pre-configures the software to read your Geiger counter output from the COM1 port. To change this setting, follow the instructions under the User Setup/Configure COM Port menu of the program.

### ***Identify Monitoring Station:***

Once you have connected your Geiger counter to the computer, turned it on, and started the program, you will be given the opportunity to Identify your Monitoring Station. This is not required, but may be helpful to you in making permanent records of your monitored radiation data, by identifying those records by the "Person Monitoring", along with "Location", "Altitude", and the "Geiger Counter Model" used. Since the radiation level recorded is dependent upon the latter three factors, by specifying them, any permanent record of monitoring that you make will be thus identified.

### ***Graphing:***

Once you have connected your Geiger counter to the computer, turned it on, and started the program, you will observe immediate graphing which appears very rapid and zig-zagged for the first 2 minutes, after which the graph "settles down". The difference is that for the first 2 minutes, the program is graphing individual radiation counts that are "minutized" to vividly demonstrate the randomness of radioactive emissions.

After the first 2 minutes, on the contrary, the program collects a full minute of radiation counts before graphing, but over a longer period of time, you will observe the graph taking on the same zig-zag pattern that you noticed during the first 2 minutes.

Note the Speed Button option to view the graph in either 2D or 3D format. The program always defaults to the 3D view. Note also the Speed Button options that save the Graph Image and/or the Screen Image to your computer in both .bmp and .jpg format, within the program directory, under a MyData folder.



### ***Alerts:***

The program, by default, establishes an Alert Level of 100 Counts Per Minute (CPM), that if exceeded by actual radiation counts, will sound an audible Alert and cause an Alert box to pop up. You can adjust this Alert Level to a CPM of your choosing, and the program will remember this setting the next time that you open the program.

You will note a check box at the top right of your screen for showing the Alert Level on the graph. Typically, you would want that checked. However, since the graph "scales to the maximum", and your Alert Level might represent that maximum in most cases, it will cause the rest of the graph, namely that of the actual radiation counts, to be flatter. So if you want to avoid that, you would uncheck that box.

The "Enable Alert Pop Up" box, when checked, will allow an Alert box to pop up whenever the Alert Level is exceeded by actual radiation counts. If you find this pop up distracting, simply uncheck the box. Without that visual warning, you will still be notified by an audible Alert sounding off every minute whenever the Alert Level is exceeded.

### ***Advanced Alert Menu:***

Note the "Advanced" button under the Alert section of the main screen, for advanced Alert features. Here, you can require the program to accumulate more than 1 minute of elevated radiation level before alerting you to such. You can also set up this software, upon an Alert, to Execute a Computer Program, or Trigger a Relay Switch. If you have the Network version of the program, you can set it up, upon a radiation Alert, to issue those Alerts by Pager and E-mail, or to other computers through a Peer to Peer Network, or to run a program on a Web server.

### ***Alert Sounds:***

Note the Speed Button for "Test Alert Sound". Go ahead and select that to play the sound file that you will hear whenever a radiation Alert is issued so that you know what to expect. If you have the Network version of the program, you can also Test the Sound for a Remote Alert, which is notably different from the local Alert Sound.

### ***Data Saving:***

The program is designed to record your radiation count data, and to do so in an exportable form so that you can later import it into a spreadsheet or the like for further analysis. The program automatically saves the radiation count data every minute to a file called Data.txt within your program directory, under a MyData folder. This "automatic save every minute" feature also preserves your data in the event of an improper shutdown of your computer.

You can also save the data manually to a different file and/or directory of your choosing by selecting the menu item called File/Save Data.



There is also a menu item in the program called File/Clear Data which enables you to clear the data, including the Data.txt file, and start the program over, without having to first exit the program and then reopen it.

Also, during the course of running the program, you may view the minute by minute data by choosing the Spreadsheet option under View/Spreadsheet, or by selecting the corresponding Speed Button. You can also view a summary of the data using the View/Report menu, or by choosing the corresponding Speed Button option.

Like the minute by minute data, the data in its entirety, namely the Report, is also automatically saved every minute to preserve the Report data in the event of an improper shutdown of your computer.

### ***Beep Sound:***

You will note a checkbox near the top right of your screen called "Make Beep Sound" designed to mimic the audible sound of a Geiger counter every time that a single radiation count is detected. The program defaults to playing that sound, so just uncheck the box if you would rather mute that beep sound.

The program is designed to run continuously for hours, days, or even weeks. Some computers running Windows operating systems released before Windows XP may not "accumulate" that beep sound perfectly, so if the program ever closes on its own, or if your computer ever shuts down improperly during the running of the program, then uncheck the "Make Beep Sound" box.

### ***Simulation:***

The program incorporates a Simulation designed to simulate the recording and graphing of radiation counts in the instance where you have no compatible digital Geiger counter plugged into your computer to produce "real" pulses. We suggest that you run this simulation at least 15 minutes, the first 7 minutes of which demonstrate the program's operation under typical background radiation, then followed by an alertable and elevated radiation count from a theoretical radioactive "event".

In fact, you are encouraged to use the Simulation to test your Alert settings, without having to wait for the "real thing" to make sure that actionable events will take place as and when they should.

The Simulation option is available only at the beginning, when the program is first opened. Either choose to run it from the opening screen, or select the Simulation menu. You can stop the Simulation at any time by choosing Simulation/Stop Simulation.



### ***Configure Other Options:***

Under User Setup, there is a menu for "Other Options". Here, you can configure other features in the program, including Automatic Restart of the program in the event of a power failure. You can also set the interval by which the program issues a visual and audible warning of a Radiation Detector Failure. Finally, the Other Options menu allows you to restore Default values throughout the whole program.

### ***Multi-tasking:***

As mentioned earlier, the program is designed to optionally run in the background while you multi-task, notifying you only when your pre-determined Alert Level is exceeded by actual radiation counts. Choose User Setup/Other Options from the Main Menu to optionally have the program minimized to the System Tray instead of the Taskbar, freeing up space, and having available the Current CPM Level with a momentary placement of your mouse pointer over the icon.