❑ Upgrading Software and Datalogger

If your Software, DataMeter, was released before this sensor came out you may require an upgrade so that it recognises and is calibrated for the Radioactivity scales. LogIT brand products require Version **j** or later to support this product. If, when using the sensor for the first time, your software displays mV or UNKNOWN SENSOR or DataMeter displays ??? then they require updating. DataMeter can be downloaded quickly and freely from our website at **www.logitworld.com**

LogIT is a joint British development between DCP Microdevelopments Limited and SCC Research

www.logitworld.com

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DP151201/3
XBW Version (1.0)

LogIT Radioactivity Probe

❑ Introduction

The LogIT Radioactivity Probe is a self-contained intelligent sensor which will plug directly into any LogIT data logger such as Black Box, Voyager or DataVision and is designed to measure radioactivity for use in education investigations.

The sensor itself is a small Geiger Muller tube which is sensitive to Alpha, Beta and Gamma radiation. The unit incorporates a high voltage generator for the Geiger tube and two ultra low power microprocessors which control the power management and send the data to the LogIT when required.

The unit is powered from a standard Alkaline 9 volt battery which should last for a minimum of 6 months in normal conditions and use.

❑ Specifications

Sensitivity: Alpha, Beta and Gamma Radiation

Range: 8000* Counts per Second
32000* Counts per Minute

* Note that the DataMeter and Voyager display will only display up to 19999 but the LogIT will actually store the full reading as above.

Power: 9 volts dc **Alkaline** battery or standard LogIT mains power pack

Geiger tube specification:

Tube filling: Neon, Argon and Halogen

Tube life: 50,000,000,000 counts at 25˚C

Storage: Gas pressure outside tube min:35 kPa / max: atmos. pressure

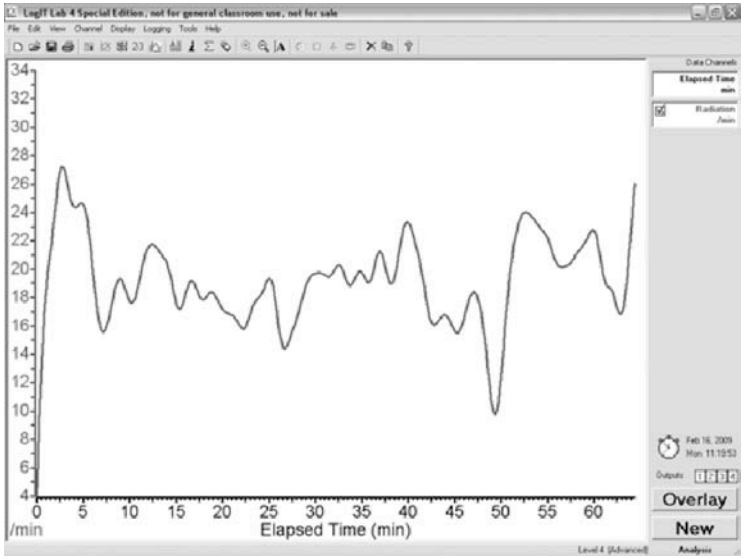
❑ Using the Radioactivity sensor (see SAFETY & CARE)

We have designed the Radioactivity probe to be extremely easy to use. It needs no power on/off switch as it detects when a LogIT is connected and automatically controls it's own power. So to use the probe just plug it into a LogIT datalogger and either switch the datalogger on or connect it to a computer with logging software.

The screen should show the current radioactive reading either in Counts Per Minute or Counts Per Second, depending on which position the front panel switch is in (CheckIT displays the word DATA above the value).

If you do not see the units displayed, your logger or software may need upgrading - see back page. The small LED on the front panel flashes each time a count is registered and a small sounder inside the unit also clicks. In a standard environment without any specific radioactive sources nearby you will probably see / hear a few counts - this is called background radiation and is quite normal.

This graph from LogIT Lab software shows typical background radiation - if your software has a 'smoothing' function it can make the graph much easier to read.



The most sensitive area of the probe is the grille at the front of the unit; you will find this particularly important when measuring Alpha particles which are so weak a piece of paper can stop them.

Please note that the display on a Voyager and DataMeter can only display a maximum 19999, but if you are measuring higher levels of radiation these will still be stored in the datalogger or on the computer, just not displayed.

❑ Power on and off

The Radioactivity probe is powered from either an internal 9volt alkaline battery or a standard LogIT power pack (as supplied for DataMeter, LogIT SL etc). The probe does not have an on-off switch as it automatically detects when the data logger is connected and switched on.

Note the probe stays on for around 2 hours after it is last used even if disconnected from the logger - this allows the probe to count during long term logging sessions and is quite normal (if connected to a DataMeter 1000 being charged the probe also remains on).

❑ Safety and Care

INVESTIGATIONS WITH RADIOACTIVE SOURCES CAN BE DANGEROUS AND STUDENTS MUST BE SUPERVISED AT ALL TIMES AND SOURCES STORED AND HANDLED CORRECTLY. THIS IS THE RESPONSIBILITY OF THE PERSON IN CHARGE AND NEITHER DCP OR ITS DISTRIBUTORS OR AGENTS CAN ACCEPT ANY RESPONSIBILITY FOR THE USE OF SOURCES.

- Never dismantle the Probe unit - **High Voltages** are inside unit!
- Never insert or allow any object, liquid, dampness or flammable gas to enter the grille in the front of the unit
- Use only Alkaline battery in unit - Rechargeable or other types are not suitable
- Do not leave battery fitted for long periods of time if unit is not being used.