

# REED

## Model R8008

Multi-Function Digital  
Radiation Scanner

### Instruction Manual



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## Features

- Features a highly-sensitive Geiger counter sensor and the latest CMOS integrated circuit technology
- Functions as a datalogger via Bluetooth
- Can detect Alpha, Beta, Gamma, and X rays
- For use in Pharmaceutical Factories, Laboratories, Power Stations, Stone Pits, Emergency Rescue, Metal Plants, Oil Fields and Pipelines, Environmental Protection, Police Department, and more
- Adjustable indication of average time
- Accumulation of radiation detection values and conversions between different measurement units
- Pulse counting function
- Automatic selection of measurement range
- Can store 4000 groups of data internally
- Alarm function
- LCD Display with numerical and bar-graph indicator

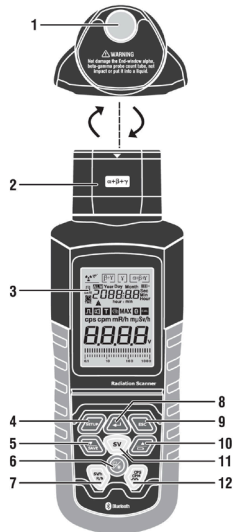
# Specifications

Measured Rays:	Alpha, Beta, Gamma, and X
Radiation Dose Rate Range:	0.0001 - 1000 $\mu$ Sv/h
Pulse Dose Rate Range:	0 - 4000cpm/cps
Accumulated Radiation Dose Value:	0.001 $\mu$ Sv - 9999Sv
Accumulated Pulse Dose Rate:	0 - 9999
Sensitivity*:	A-Ray: From 4.0 MeV B-Ray: From 0.2 MeV Y-Ray: From 0.02 MeV X-Ray: From 0.2 MeV
Accuracy:	< 10% (less than 500 $\mu$ Sv/h) < 20%(less than 600 $\mu$ Sv/h)
Selection of Rays:	Combination of Alpha, Beta, Gamma, and X Rays
Output Port:	Wireless Bluetooth Transmission
Average Time:	Adjustable 2 to 12 seconds
Natural Environment Value:	Less than 0 - 0.2 $\mu$ Sv/h
Internal Memory:	4000 groups of data
Power Supply:	4 x 1.5V batteries
Operating Temperature:	0 - 50°C
Weight:	206g
Dimensions:	200 x 70 x 45mm

\* 1000 cpm/mR/hr or 108 pulses referenced to Cobalt-60 radiation of 1  $\mu$ Sv/h ambient

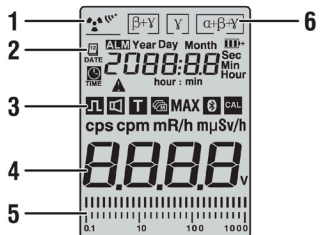
# Instrument Description

1. Sensor Window of G.M. Geiger Counter Tube
2. Ray Selection Switch
3. LCD Screen
4. Setup Button
5. Data Storage/Down Button
6. Power/Backlight Button
7. Unit Button
8. Enter Button
9. ESC Button
10. Battery/Up Button
11. Dose Button
12. Pulse Button



## Display Description

1. Boot Nuclear Radiation Measuring Icon
2. Date/Time Icon
3. Measuring Function Indicator
4. Measurement and Unit Indicator
5. Bar Measurement Reading
6. Ray Type Indicator



# Operating Instructions

Press and hold the Power Button for 2 seconds to turn the meter on. It will beep and the LCD screen will activate indicating it has turned on. Press and hold the Power Button again to turn the meter off. Be sure to turn the meter off properly or loss of data may occur.

## *Ray Selection Switch*

Rotate the Ray Selection Switch to select the ray you wish to measure. Be careful when rotating the switch to avoid damage to the sensor.

- Middle is for detecting Gamma Rays
- Left is for detecting Gamma and Beta Rays
- Right is for detecting Alpha, Gamma, and Beta Rays
- Any position will detect X Rays

## *Backlight*

When the meter is on, press the Backlight Button to activate or deactivate the LCD Backlight. The Backlight will automatically turn off after 1 minute.

## *Unit Conversion for Dose Rate*

Press the Unit Button to measure in Standard Mode, which displays the current measurement value in  $\mu\text{Sv/h}$ . Press the Unit Button again to convert the unit to  $\text{mRem/h}$ . The conversion is based on the formula:  $10\mu\text{Sv/h} = 1\text{mRem/h}$ .

## *Dose Accumulation Rate*

Press the Dose Button to enter the Infinite Dose mode, and the icon “ $\mu\text{Sv}$ ” will appear on the display. This mode accumulates calculations for no set amount of time.

To enter the Timed Dose mode press the Dose Button again. The default value of time is 60 minutes. Press the Dose Button again to stop the timed measurement and the accumulated value will appear on the LCD. Press the Dose Button again to return to Infinite Dose mode.

## *Timed Dose Accumulation Adjustment*

1. While in Timed Dose mode press and hold the Dose button for 2 seconds. The icons “ $\mu\text{Sv}$ ” and “min” will appear on the LCD with the value of 060 indicating 60 minutes. The maximum time value is 999 minutes.
2. Press the Up and Down Buttons to adjust the flashing digit.
3. Press the Enter Button to proceed to the next digit, and press the ESC button to return to the previous digit.
4. When the time has been set press the Enter Button to begin measuring Dose Accumulation for the set amount of time. The icon “TIME” will appear on the LCD.
5. Press the Up and Down Buttons to adjust the display value.
6. The meter will beep when the set time is up. The accumulated Dose value will appear on the screen.
7. Press the Dose Button to pause the timer, and press it again to resume measuring. Press and hold the Dose Button to re-enter the Timing setup Mode.

## *Pulse Counting*

This meter can be used as a Geiger Counter, displaying received accumulative pulse on the LCD. In this mode the meter will only record received pulse and calculate pulse, it will not be converted to Sv.

1. Press the Pulse Button to activate Pulse Counting Mode.
2. Press the Pulse Button again to switch from CPS (Pulse/Second) and CPM (Pulse/Minute).
3. Press the Pulse Button a third time to resume Pulse Counting mode, and the Pulse icon will appear on the LCD.
4. Press the Pulse Button a fourth time to enter Timed Pulse Counting mode, and a beep will sound. The Pulse and Time Icon will appear on the Display. The default value of time is 60 minutes.
5. Press the button again to stop pulse counting, and press it once again to return to CPS Pulse Counting mode.

## *Timed Pulse Counting Adjustment*

1. While in Timed Pulse Counting mode press and hold the Pulse Button for 2 seconds. The icons “Pulse” and “Time” will appear on the LCD with the value 060 indicating 60 minutes. The maximum time value is 999 minutes.
2. Press the Up and Down Buttons to adjust the flashing digit.
3. Press the Enter Button to proceed to the next digit, and press the ESC button to return to the previous digit.
4. When the time has been set press the Enter Button to begin measuring Dose Accumulation for the set amount of time. The icon “TIME” will appear on the LCD.
5. Press the Up and Down Buttons to adjust the display value. The meter will beep when the set time is up.
6. Press the Pulse Button to pause the timer, and press it again to resume measuring. Press and hold the Pulse Button to re-enter the Timing setup Mode.

## *Internal Storage Recording Mode*

When taking a measurement, press the Save button to enter Recording Mode. A record will be saved every other minute. A maximum records saved is 4000 groups of data. When the memory is full the meter will automatically save over the first measurements. Press the Save button again to exit Recording Mode.

## *Bluetooth Recording Mode*

When the meter's Bluetooth functionality is turned on, press the Save button. This will transmit all measurements to a PC via Bluetooth. For instructions on connecting a device via Bluetooth to your PC please refer to your PC's instruction manual.

## *Battery Life Indicator*

To check on the meter's battery status, press the Battery Button. Press the ESC Button to return to normal measuring. If the batteries die then all internal records will be lost.



# Setup Menu

You can adjust the following preferences in the Setup Menu:

- Date Format
- Time Format
- Alarm Threshold
- Pulse Sound
- Average Measurement Time
- Bluetooth Data Transmission

## *Date Format Setup*

1. Press the Setup Button and press the Up or Down buttons to select “DATE”. Press the Enter Button to select the Date Format Setup.
2. Press the Up and Down Buttons to adjust the flashing value.
3. Press the Enter Button to proceed to the next value, and press the ESC button to save your settings and exit to the Setup Menu.

## *Time Format Setup*

1. Press the Setup Button and press the Up or Down buttons to select “TIME”. Press the Enter Button to select the Time Format Setup.
2. Press the Up and Down Buttons to adjust the flashing value.
3. Press the Enter Button to proceed to the next value, and press the ESC button to save your settings and exit to the Setup Menu.


## *Alarm Threshold Setup*

An alarm will sound when the measured value is greater than the Alarm Threshold. The default is 205 $\mu$ Sv/h.

1. Press the Setup Button and press the Up or Down buttons to select “ALM”. Press the Enter Button to select the Alarm Threshold Setup.
2. Press the Up and Down Buttons to adjust the flashing value.
3. Press the Enter Button to proceed to the next value, and press the ESC button to save your settings and exit to the Setup Menu.

## *Pulse Sound Setup*

When radiation is detected the meter will make a “ticking” sound. The stronger the radiation signal is the faster the “ticking” sound will be.

1. Press the Setup Button and press the Up or Down buttons to select the  icon. Press the Enter Button to select the Pulse Sound Setup.
2. Press the Up and Down buttons to select either “ON” or “OFF”.
3. Press the Enter Button to confirm the value, and press the ESC button to save your settings and exit to the Setup Menu.

## *Average Measurement Time Setup*

The processing measurement time can be set up from 8 to 120 seconds. An increase of radiation will automatically and proportionally reduce the Average Measurement Time. When the time is set to 8 seconds and the radiation strength is more than 5 $\mu$ Sv/h, the response time will adjust to 2 seconds. The factory default time is 30 seconds.

1. Press the Setup Button and press the Up or Down buttons to select “T”. Press the Enter Button to select the Average Measurement Time Setup.
2. Press the Up and Down Buttons to adjust the flashing value.
3. Press the Enter Button to proceed to the next value, and press the ESC button to save your settings and exit to the Setup Menu.

## *Bluetooth Data Transmission*

1. Press the Setup Button and press the Up or Down buttons to select “BL”. Press the Enter Button to select the Bluetooth Data Transmission Setup.
2. Press the Up and Down buttons to select either “ON” or “OFF”.
3. Press the Enter Button to confirm the value, and press the ESC button to save your settings and exit to the Setup Menu.



