

Quick Start Guide

1

Install batteries

Open the battery compartment on the back of the unit and insert two (or one) AAA size batteries. Follow the picture inside the battery compartment for the proper alignment.



2

Turn the device ON

Simply push and hold the big button on the lower right-hand side until the screen is on. As soon as "RD1503+" appears, the unit has started taking its first measurements.

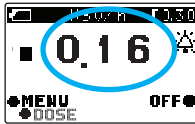


3

First results

The measurements taken by the Geiger Counter are updated every 10 seconds.

The numbers will change constantly - this is normal, as the natural background radiation fluctuates. The most accurate reading is displayed once all 4 sides of the little square graphic are drawn (left side of the screen).



4

Menu

To enter the options menu, push the top-left Menu button. The contents of the menu will appear.

Default settings

units – $\mu\text{Sv/h}$
level – 0.30 $\mu\text{Sv/h}$
sound – off
back-light – on



5

Navigating Menu

To navigate the menu, use the Cursor button - the one on the lower left side of the device.

To select or change an option to which the cursor is pointing, use the Menu button.

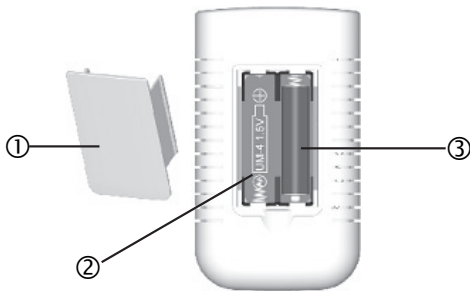


6

Exit Menu / Switch OFF

The same large button that is used to turn the device ON is used to exit the Menu or to switch the device OFF.

Note: your settings will be saved.



1. Remove the cover of the battery compartment.
2. Install into the battery into the battery compartment as illustrated by the graphic inside the compartment.
3. Close the battery compartment by reattaching the plastic cover.

TIPS: For long-term measurements we recommend using 2 batteries, otherwise a single battery is enough.

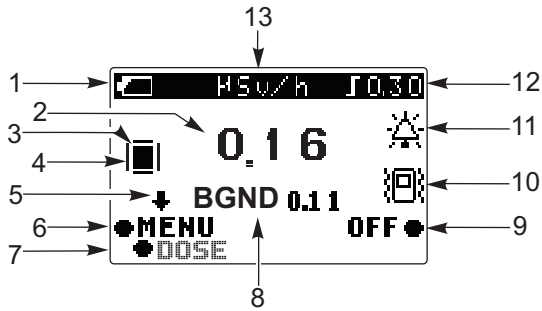
Don't mix old and new batteries together.

If you don't expect the unit to be used for a long time, remove the batteries altogether.



1. LCD screen.
2. The MENU button. Has three functions: enter Menu, Select Option, and Change Option.
3. The CURSOR Button. Used to move the cursor and to switch between two measurement modes: NOW and DOSE.
4. The ON/OFF Button. Also exits the menu.
5. Battery compartment.

LCD display



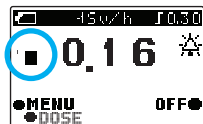
1. Battery charge:
 - fully charged
 - almost drained
 - replace the battery
2. Measurements.
3. Detection rate indicator “quantum”— blinks as often as the particles are detected by the sensor.
4. - Detection cycle counter — essentially a timer. Draws a “side” of the square frame as the measurement cycles progress. The most accurate reading is shown once the full frame is drawn (4 cycles = 40 seconds).
5. - (when the Background Mode is On) Arrow down means that the value is less than background radiation, hence 0.00 value is showing.
6. Access the Menu

Basic operations

Switch the device ON by pressing and holding the big button until the LCD screen activates.

Scanning for radiation

As soon as the unit is activated, it starts taking measurements automatically. The first readings will appear after 10 seconds.



Every time radiation particles (including the normal background radiation) hit the sensor, a black square icon blinks for a moment.

The more particles hit the sensor, the more frequently the square blinks: frequency of blinking is proportional to dose rate.

As the measurement cycles continue, their progression is shown by the little frame that is being drawn around the black square.

- first measurement cycle
- second measurement cycle
- third measurement cycle
- fourth measurement cycle - the most reliable result!

The second and the third measurement cycles are averaged automatically.

Important: The first cycle is intended to give an approximate preliminary result. The most reliable measurement is displayed after about 40 seconds, when the frame icon is completely drawn and has 4 sides - the fourth measurement cycle.

7. Switch to mode of measurements:
NOW current radiation levels in your vicinity.
DOSE accumulated radiation over time.
8. Background Radiation value (if Background Mode is On) «BGND XXX» where Xs are the value in $\mu\text{Sv/h}$ or $\mu\text{Rem/h}$.
9. OFF — Turn off the device by holding down the big button.
10. — Vibration Alarm ON. When vibration is off, this icon is hidden.
11. — Audio Alarm ON. When audio alarm is off, this icon is hidden.
12. Alarm Threshold Level — a number at which the alarm will sound and/or vibrate. Level can be set from 0.10 to 0.90 in $\mu\text{Sv/h}$. Or 10 to 90 in $\mu\text{Rem/h}$. For example:
 - 0.30 default alarm level in $\mu\text{Sv/h}$
 - 30 default alarm level in $\mu\text{Rem/h}$
13. Units:
 - micro Sieverts per hour (modern units)
 - micro Roentgens per hour (older units)

TIP: Normally, we recommend keeping the Background Mode off, unless you are scanning a specific object in a new environment. This mode takes 5 consecutive readings to establish base-line background radiation in your immediate area, and then shows any readings higher than the established baseline.

How much is dangerous?

Not all radiation is the same, so scientists use the ‘sievert’ to measure the health risks of radiation.

A one-sievert dose of radiation would cause immediate radiation sickness. But most radiation doses are much smaller, so you’ll see them measured in millisieverts or even smaller microsieverts.

- 1 sievert = 1000 millisieverts
- 1 millisievert = 1000 microsieverts

$\mu\text{Sv/h}$ micro Sieverts per hour

- 0.10 This is low, it does not get any lower.
- 0.21 Pretty normal. Depends on local geology.
- 0.42 Happens occasionally with no real reason. Just keep an eye on it.
- 0.83 ALERT - No need to panic, but try to figure out what is going on, stay out of the rain and avoid unnecessary trips.
- 1.25 Real risk of cancer if exposed for a year.
- 4.17 Real risk of cancer if exposed for 90 days.
- 20,000 Annual limit for Nuclear Plant Workers.
- 100,000 Annual limit for Fukushima workers.

Sievert calculations based on Cesium-137 isotope.