

Radiation Monitoring Watch

The Radiation Monitoring Watch (RMW) is a GM tube based, lightweight, compact, and ultra low power gamma radiation monitoring gadget in the form factor of a wrist watch. It indicates the prevailing dose rate, accumulated dose and current date & time. RMW is an ideal device for the first responders attending to an emergency or disaster to rule out the presence of a radiological event and can also assist the Emergency Response Personnel during the management of a radiological emergency. It is powered by a replaceable commercially available coin cell, capable enough for more than six months of continuous operation in background radiation. RMW alerts the user with an audible alarm when the dose rate exceeds the threshold.



FEATURES

- Continuous monitoring of the ambient gamma dose and dose rate.
- Detects Gamma-Radiation through Geiger-Muller tube detector.
- Compact and light weight system.
- Water Resistant Design.
- Digital watch with calendar
 - Hours and Minutes.
 - Day, Date and Month.
 - 12 hrs Time Format.
- Audible alarm on preset dose rate.
- The low battery and over range indication.
- Auto exit from “Setting Mode” to normal operating mode after 30 sec of inactivity.

SPECIFICATIONS

- Energy Range: 60 keV to 1.5 MeV.
- Gamma dose rate measurement range: 0.04 $\mu\text{Sv/h}$ to 4mSv/h.
- Sensitivity: 0.16CPS/ $\mu\text{Sv/h}$.
- Alarm type: Audio.
- Current consumption at background radiation level: 70 μA .
- Battery life: more than 6 months (at background radiation level)
- LCD refresh rate 10 seconds.
- Auto adjustment of response time in the range of 10to 150 seconds.
- Battery: Single CR 2450 Lithium battery (coin cell).
- Dial Diameter: 52mm.
- Weight: 65g (watch with battery).
- Display Size: 1.28”.
- Display Resolution: 128 pixels *128 pixels.

APPLICATIONS

- RMW is an ideal device for the first responders attending to an emergency or disaster to rule out the presence of a radiological event and can also assist the Emergency Response Personnel during the management of a radiological emergency. It can also be used by the visitors to a Nuclear Facility.

INFRASTRUCTURAL REQUIREMENT

- **Space:**
Fabrication of RMW does not require large working space. A small working area of ~10 to 15 Square Feet may be more than adequate.
- **Man Power :**
One technician is required for components soldering, system assembly and testing.
- **Assembly and Test Equipment :**
Standard assembly and testing equipments like Soldering station, Microcontroller programmer, Oscilloscope, Multi-meter, Electrostatic voltmeter etc.
- **Power Supply :**
Power supply is required only for assembly and test equipment
- **Third Party Facilities :**
 - PCB fabrication facility
 - RMW enclosure fabrication facility
 - Radiation Calibration Facility.