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YuqiaoTime GC-01

FNIRSI GC-01 Nuclear Radiation Detector User Manual

Model: GC-01
Brand: YuqiaoTime

1. PRODUCT OVERVIEW

The FNIRSI GC-01 is a portable nuclear radiation detector designed to measure the intensity of ionizing radiation, including beta particles, gamma rays, and X-rays. It utilizes a high-precision Geiger-Müller counter tube to provide accurate readings for personal dosimetry and environmental monitoring. This device is suitable for detecting radiation in various environments, including industrial settings, food, metal, ceramic tiles, and marble.

Key Features

- High-precision Geiger-Müller counter for accurate detection.
- Detects beta particles, gamma rays, and X-rays.
- Adjustable alarm thresholds with sound, glitter (visual), and vibrate modes.
- Real-time, average, and cumulative dose equivalent rate display.
- Built-in 1100mAh lithium battery for extended operation.

FNIRSI

NUCLEAR RADIATION DETECTOR



Sound



Glitter



Vibrate



GEIGER COUNTER METER



I-131/CT



1100MAH



INDUSTRIAL



FOOD/METAL



CERAMIC TILE/MARBLE



β , γ , X-RAY/TREND GRAPH



Figure 1: FNIRSI GC-01 Nuclear Radiation Detector. This image displays the FNIRSI GC-01 Nuclear Radiation Detector, highlighting its main features and display interface. It shows the device's ability to detect various radiation types and its alarm modes.

2. SAFETY INFORMATION

Always handle the device with care. Do not attempt to open or modify the device, as this may compromise its accuracy and safety features. Keep the device away from extreme temperatures, moisture, and strong electromagnetic fields. This device is intended for informational purposes and should not be used as the sole basis for critical safety decisions without professional consultation.

// Nuclear Radiation // Dose Hazards at a Glance

The harm of different doses to the human body








Dose (Rum)	Response
 5~20	There could be a delayed reaction. It could damage the chromosomes.
 20~100	Temporary Leukopenia.
 100~200	Mild radiation sickness within hours: vomiting, diarrhea, fatigue, reduced resistance to infection.
 200~300	Severe radiation sickness reaction, Symptoms are the same as above. This exposure is a lethal dose, After 30 days, 10%-30% of those who die will have a LD of (10-35)/30
 300~400	Severe radiation sickness. Damage to bones and gut. LD is (50-70) /30
 400~1K	Acute, Premature death, LD(60-95)/30
 1K~5K	Acute, Death within days, LD 100/10

Figure 2: Nuclear Radiation Dose Hazards. This table provides a quick reference to the potential health hazards associated with different levels of nuclear radiation exposure, ranging from delayed reactions to acute death.

3. PACKAGE CONTENTS

Verify that all items are present in the package upon unboxing:

- FNIRSI GC-01 Nuclear Radiation Detector
- Type-C Charging Cable
- User Manual

Product parameters

Types of detection rays:	y rays, x rays, β rays
Detector:	Energy Compensation GM Tube (Geiger Tech no logy Tube)
dose equivalent rate:	0.00-10000 μ Sv/h(10mSv/h)
Cumulative dose equivalent:	0.00 μ Sv-500.0mSv
Energy range:	48keV-1.5Mev [^] \pm 30% (for 137CS-)
Language:	Chine se/E nglish switch
Sensitivity:	80CPM/pSv (For Co-60)
Dosage unit:	nSv/h,pGy/h,mR/h, cps,cpm Switch
Power supply:	1100MAh lilhium battery
Alarm method:	light, vibrati on, sound
Size:	120x78x27mm



Figure 3: Product Parameters and Package Contents. This image presents a detailed table of the FNIRSI GC-01's technical specifications and lists the items included in the product package, such as the device, user manual, and Type-C charging cable.

4. DEVICE LAYOUT

The FNIRSI GC-01 features a clear display screen and intuitive button controls for easy operation. The main screen displays real-time radiation readings, average values, and cumulative dose. Navigation buttons allow access to settings and different measurement modes.



Figure 4: Device Interface and Alarm Settings. This image shows the user interface for setting alarm values on the FNIRSI GC-01, allowing users to configure thresholds for automatic alarms and select between sound, glitter, and vibrate alarm modes.

5. SETUP

5.1 Charging the Device

Before first use, fully charge the device using the provided Type-C charging cable. Connect the cable to the device's charging port and a standard USB power adapter (not included). The charging indicator on the screen will show the charging status.

5.2 Powering On/Off

- **To Power On:** Press and hold the power button (usually the 'OK' button) until the screen illuminates.
- **To Power Off:** Press and hold the power button until the device shuts down.

5.3 Initial Settings

Upon first power-on or after a factory reset, you may need to configure basic settings:

1. Navigate to the 'Settings' menu using the navigation buttons.
2. Select 'Language' to choose your preferred language (e.g., English).
3. Select 'Unit' to set the desired measurement unit (e.g., uSv/h, mR/h).
4. Adjust the 'System Clock' to ensure accurate timekeeping for data logging.

6. OPERATING INSTRUCTIONS

6.1 Measurement Modes

The device typically operates in a continuous measurement mode, displaying:

- **Current Dose Rate:** Real-time radiation level.
- **Average Dose Rate:** Average radiation level over a period.
- **Cumulative Dose:** Total accumulated radiation dose since the last reset.

The device automatically detects beta, gamma, and X-rays. Its GM Geiger Counter Tube offers high precision for accurate readings.

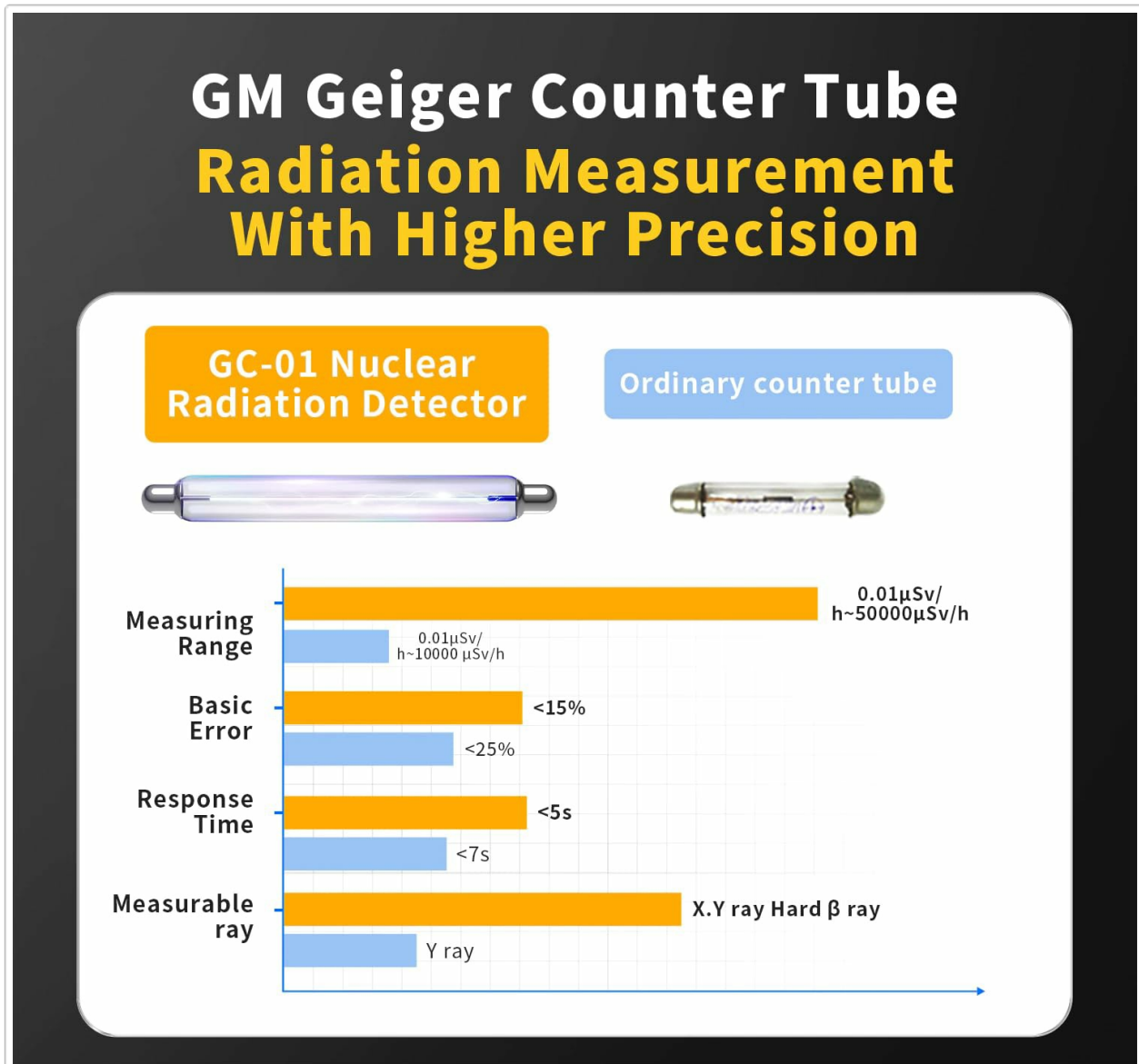


Figure 5: GM Geiger Counter Tube Precision. This chart compares the performance of the GC-01's Geiger-Müller tube with a standard counter tube, demonstrating its superior measuring range, lower basic error, faster response time, and broader detection capabilities for X, Y, and hard Beta rays.

6.2 Setting Alarm Values

To set a custom alarm threshold:

1. Access the 'Set Alarm' option in the menu.
2. Use the navigation buttons to adjust the 'Current Alarm' value (dose rate threshold).
3. Adjust the 'Cumulative Alarm' value (total dose threshold) if desired.

4. Confirm your settings. The device will trigger an alarm if the measured radiation exceeds these set values.

6.3 Alarm Modes

The FNIRSI GC-01 offers three distinct alarm modes:

- **Sound:** An audible alert will be emitted.
- **Glitter:** The screen will flash or a visual indicator will activate.
- **Vibrate:** The device will vibrate to alert the user.

These modes can be configured in the 'Ala Mode' setting within the menu.

7. MAINTENANCE

7.1 Cleaning

Wipe the device with a soft, dry cloth. Do not use abrasive cleaners, solvents, or immerse the device in water. Ensure the charging port is free from dust and debris.

7.2 Storage

Store the device in a cool, dry place away from direct sunlight and extreme temperatures. If storing for an extended period, ensure the battery is partially charged (around 50%) to prolong its lifespan.

7.3 Battery Care

To maintain battery health, avoid fully discharging the device frequently. Recharge the battery when the low battery indicator appears. Use only the provided Type-C cable for charging.

8. TROUBLESHOOTING

8.1 Device Does Not Power On

- Ensure the battery is charged. Connect the device to a power source using the Type-C cable and try again.
- Press and hold the power button for at least 5 seconds.

8.2 Inaccurate Readings

- Ensure the device is not near strong electromagnetic interference sources.
- Verify that the measurement unit is correctly set in the device settings.
- If readings are consistently abnormal, contact customer support.

8.3 Alarm Not Functioning

- Check the 'Set Alarm' values to ensure they are configured correctly and are not too high.
- Verify that the desired 'Ala Mode' (Sound, Glitter, Vibrate) is enabled in the settings.

9. SPECIFICATIONS

Parameter	Value
Types of Detection Rays	Gamma rays, X-rays, Beta rays
Detector	Energy Compensation GM Tube (Geiger Technology Tube)
Dose Equivalent Rate	0.00-100000 μ Sv/h (10mSv/h)
Cumulative Dose Equivalent	0.00 μ Sv-500.0mSv
Energy Range	48keV-1.5MeV \pm 30% (for 137CS-)
Language	Chinese/English switch
Sensitivity	80CPM/pSv (For Co-60)
Dosage Unit	nSv/h, pSv/h, mR/h, cps, cpm Switch
Power Supply	1100mAh lithium battery
Alarm Method	Light, vibration, sound
Product Dimensions (L x W x H)	120 x 78 x 27 mm
Product Weight	500 grams
Measurement Precision	\pm 0.1%
Certifications	RoHS, CE
Material	Acrylonitrile Butadiene Styrene

10. WARRANTY AND SUPPORT

The manufacturer provides a commitment to spare parts availability for 5 years from the date of purchase. For technical support, warranty claims, or service inquiries, please refer to the contact information provided with your purchase documentation or visit the official YuqiaoTime website.