BEASTEK S.A.C.

# Handheld Radionuclide Identifier

NUCTECH COMPANY LIMITED

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# 1. Summary

RM0100NA Handheld Radionuclide Identifier developed and manufactured by NUCTECH Co. Ltd. China, is a handheld radionuclide detection device with the functions of source search, dose rate measure and radionuclide identification. RM0100NA Handheld Radionuclide Identifier uses high sensitive gamma detectors and advanced spectroscopic algorithms, which provides the means of detection, alarm and identification for crisis management of nuclear materials, the means of survey and analysis for consequence management of radionuclide, and to achieve rapid positioning of radionuclide.

**Fig.1 RM0100NA Handheld Radionuclide Identification (only for reference)**

# 2. Features

- Source search, dose rate measure and radionuclide identification modes
- Built-in preset radionuclide library forrapid radionuclide classification and identification, including of SNM, medical, industrial and NORM
- Radionuclide library is expandable and modification
- Advanced self-stabilizing technology
- Designed according to the requirements recommended by IAEA, IEC and ANSI
- Audio, visual and vibration alarm indication
- Remote control and data transfer to PC by analyzing software

# 3. System Configuration

RM0100NA is composed of gamma detector, GM tube, data acquisition & processing unit, user interface. Fig. 2 shows the system configuration.

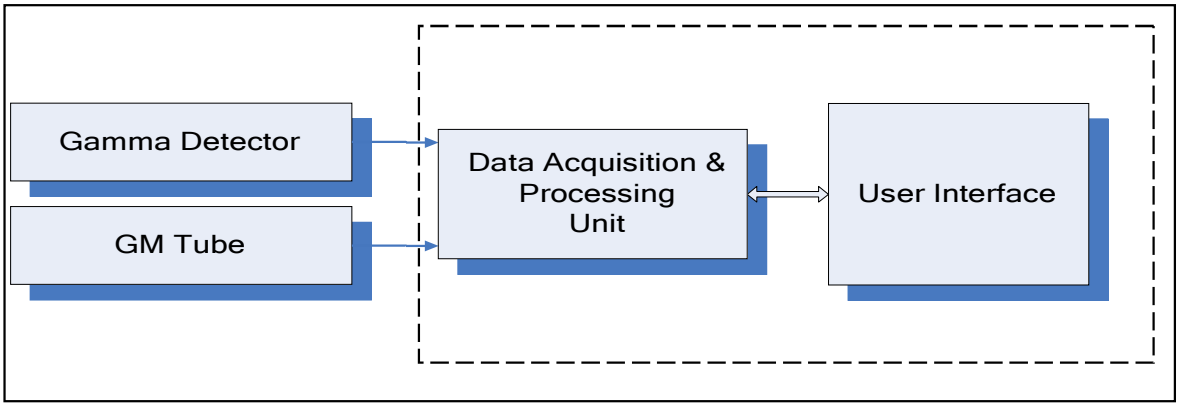


**Fig.2 System Configuration of RM0100NA Handheld Nuclide Identification**

- Gamma Detector: Applying with NaI(Tl) detector to detect gamma ray and send the signal to the Data Acquisition & Processing Unit;
- Geiger-Mueller Tube: For high dose rate measurement;
- Data Acquisition & Processing Unit: A Multi Channel Analyzer composed of AD converter and DSP. It takes charge of acquiring, processing and analyzing data from detectors, and recording and displaying the results.
- User Interface: taking charge of data and alarm indication.

# 4. Specifications

## 4.1 Sensitivity Specifications

- Special nuclear materials: $^{237}$Np, $^{239}$Pu, $^{240}$Pu, $^{233}$U, $^{235}$U, $^{238}$U
- Industrial radionuclides: $^{241}$Am, $^{133}$Ba, $^{57}$Co, $^{60}$Co, $^{137}$Cs, $^{152}$Eu, $^{192}$Ir, $^{75}$Se, $^{228}$Th, $^{204}$Tl
- Medical radionuclides: $^{51}$Cr, $^{18}$F, $^{67}$Ga, $^{123}$I, $^{125}$I, $^{131}$I, $^{111}$In, $^{99}$Mo, $^{103}$Pd, $^{153}$Sm, $^{89}$Sr, $^{99m}$Tc, $^{201}$Tl, $^{133}$Xe
- Naturally occurring radioactive materials (NORM): $^{40}$K, $^{226}$Ra, $^{232}$Th, $^{238}$U (Natural)

## 4.2 General Specifications

| | |
|---|---|
| **Gamma Detector** | NaI(Tl) Φ30mm×50mm |
| | Geiger-Mueller counter Φ7.5mm×55mm |
| **Energy Range** | 25 keV ~ 3000keV |
| **Dose Rate Range** | 100nSv/h ~ 10mSv/h |
| **MCA** | 1024 channels |
| **INL, top 99%** | ＜0.1% |
| **DNL, top 99%** | ＜1% |
| **Throughput Rate** | ＞50Kcps |
| **Spectrum Memory** | 100,000 spectra at 1024 channels |
| **Stabilization** | Automatic energy calibration and stabilization |
| **Nuclide Library** | Built-in and user-defined |
| **Dimensions** | 292mm×142mm×165mm (including handle) |
| **Operation Time** | 8 hours with built-in rechargeable Li at 25℃ |
| **External Power** | 9VDC / 2A |
| **Interface** | USB / Ethernet |
| **Display** | 3.5″ TFT Touch Screen (320×240) |
| **Alarm Indication** | Audio, visual and vibration |
| **Alarm Threshold** | Adjustable |
| **Protection** | IP54 |
| **Operation Temperature** | -20℃～+50℃ |
| **Weight** | 2.2kg |