

RAD IQ™ SPRD



SPRD (Spectroscopic Personal Radiation Detector)

“RIID-Class Specification and Performance, All in an SPRD Package.”

“For users who need handheld RIID-level detection, isotope identification, and connectivity—but can’t justify the cost or complexity of a full RIID—Nucare’s SPRD delivers a practical, high-performance alternative in a compact, affordable package.”

The new RAD IQ™ SPRD addresses the growing demand for reliable nuclide identification and improved neutron sensitivity, as specified by ANSI standards for SPRD.

Utilizing cutting-edge technologies, the SPRD can notify users about dangerous radioactive nuclides, while also providing GPS and multimedia content.

With decades of experience in creating portable radiation detection solutions, Nucare has effectively guided the design of this compact and lightweight SPRD, incorporating advanced features typical of hand-held RIIDs without sacrificing the quality of radionuclide identification.

The innovative approach of using GPS and network to collect “Big Data” on radioactive nuclides creates detailed “Radiation Maps,” ensuring outstanding performance for military operations and radiological survey.



Applications

- Homeland Security
- Emergency Responder
- Safeguard and nuclear security
- Radiological Area Mapping
- Geological Radiation Survey

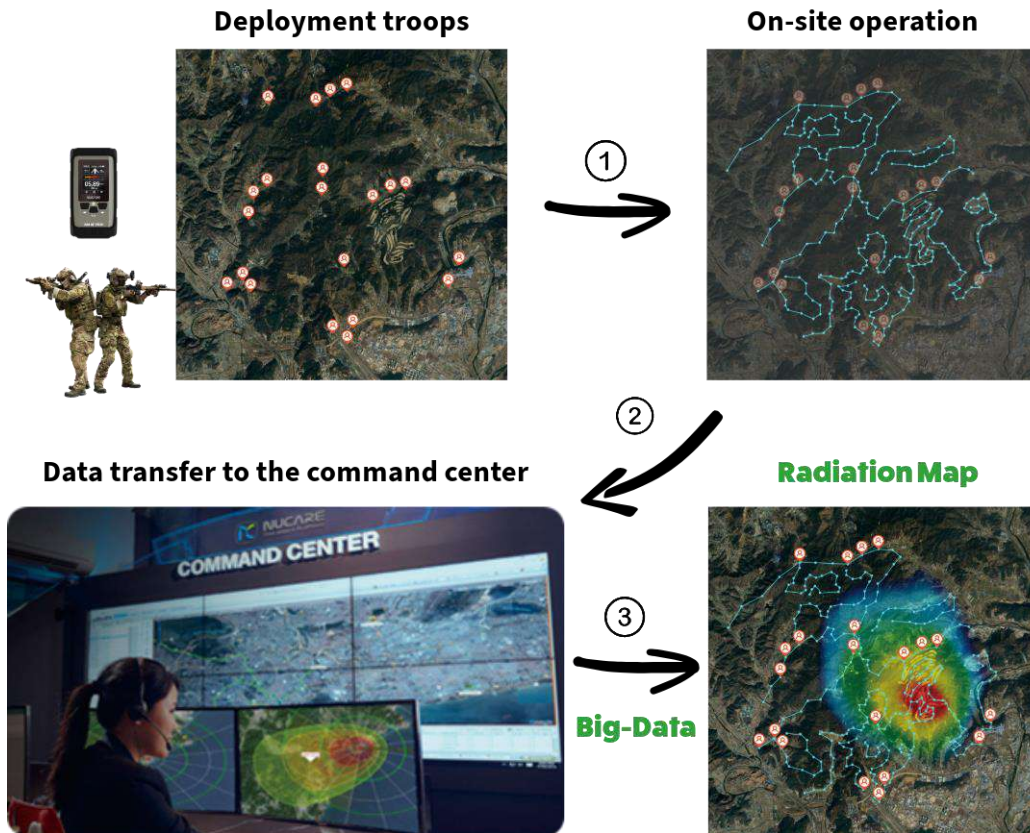
Key Features

- ANSI N42.48 compatible
- Enhanced neutron sensitivity
- Built-in camera, GPS, and Gyro sensors
- One-touch reach-back service
- Sourceless auto-stabilization
- Technologies supporting Big-Data

❖ Application example: Radiation Map

An example of a radiation survey for military operations is described below.

Equipped with the SPRD, military troops deployed in the field can simultaneously collect radiation survey data while carrying out their missions. This survey data is consolidated at the command center as **“Big-Data”** to generate a **“Radiation Map”**, which indicates the locations of nuclear weapons and contaminated areas.

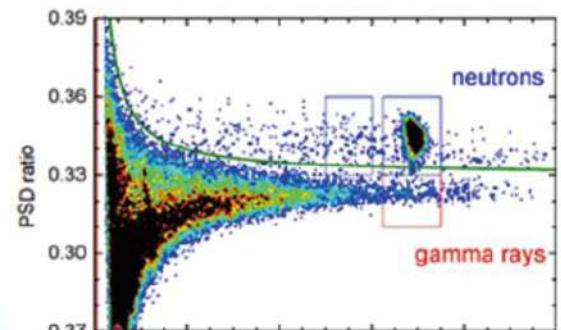


❖ High performance CLLBC scintillator

CLLBC is a high-performance scintillator designed for the simultaneous detection of gamma rays and neutrons.

It offers improved energy resolution for gamma rays and increased sensitivity for neutron.

Nucare's licensed algorithm optimizes the separation between gamma rays and neutrons.



❖ Description of Device

The SPRD300 establishes new standards for compactness, lightness, and ease of use. It comes standard with the assemblies listed below.



1	Gamma & Neutron det	2	PIN detector (highdose)	3	LCD display	4	Function Buttons
5	Protective Cover	6	USB Port	7	Belt Clip	8	Camera

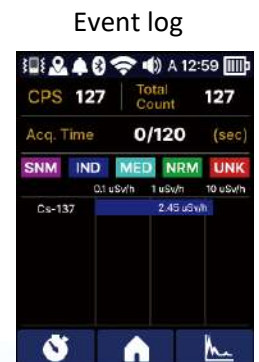
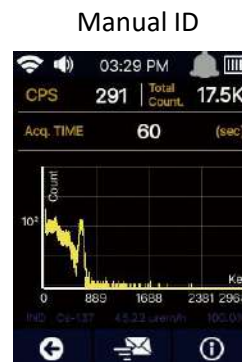
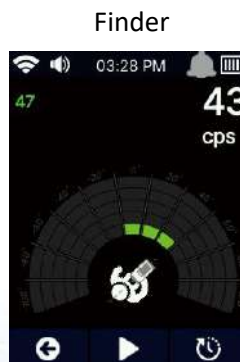
❖ Application software

The application software provides enhanced convenience and performance. Its intuitive menu, hierarchical design, and ergonomic keypad ensure easy operation.



Alarm status

The SPRD provides four levels of alarms depend on dose rate: 'move forward', 'move back', 'in range' and 'danger' alarm level.



❖ Specifications

DETECTORS

Gamma only detector	CsI(Tl) and PIN detector (for high dose)
Gamma and Neutron	CLLBC and PIN detector (for high dose)

PERFORMANCE

Energy Range	30 KeV - 3 MeV
Dose rate range	< 100nSv/h ~ 1mSv/h (CsI or CLLBC), 1mSv/h ~ 10mSv/h (Pin diode)
Energy resolution	< 8.5% (CsI), < 4% (CLLBC)
Sensitivity	CsI(Tl): 3.8 cps/urem/h @Cs137, CLLBC: 1.3 cps/urem/h @Cs137
Linearity	< 2% (Realtime Linearization by firmware)
MCA Channel	16bit 1024ch
Stabilization	Temperature corrected real time stabilization
Identification	ANSI N42.48 compatible

BATTERY

Type	Li-ion
Operation time	Sleep mode: 16 hr .with display back light off, Max run time: 6 hr.

PHYSICAL

Dimensions(WxHxD)	70 mm x 148 mm x 38 mm	Weight	340 g
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ENVIRONMENTAL

Operating Temp	-20 °C (-4°F) ~ 50 °C (122°F)	Protection Rating	IP65
Relative Humidity	10 to 80%, non condensing	Testing Condition	EN 61326, MIL-STD-810G 501.5, MIL-STD-810G 514.6

DISPLAY

Type	LCD
Size	2.4 inch
Resolution	240 x 320 pixels

INPUT/OUTPUT

USB	USB C type
Bluetooth	BLE 5.0
WLAN	IEEE 802.11 b/g/n Wireless LAN

MISCELLANEOUS

GPS	22tracking, 66channels, 1-10Hz	Reach-back	ANSI N42.42 or CSV event data
Camera	CMOS 8MP		
Gyro Sensor	Linearity 0.1 ± %FS		

ACCESSORIES

Carrying Case	Portable hard case	Charger	USB charger
Belt clip	Belt clip	Connection cable	Mini USB Cable



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