ADVANCED TECHNOLOGY FOR A SAFER WORLD

# Raider

## Radionuclide Identifier



The **Radiation Raider** is a state-of-the-art handheld instrument in a class of its own. It uniquely meets or exceeds the performance requirements of ANSI N42-34 (RID) and ANSI N42-48 (SPRD) standards. The instrumentutilizes an innovative array of solid-state CZT detectors and (optional) $He_3$ tubes to provide superior gamma and neutron sensitivities resulting in a rapid identification and verification of radioactive materials

The Raider is small enough and light enough to be held and operated with one hand and can be conveniently clipped to the user's belt in the holster provided. Four buttons, two on each side, are all that are required to access every feature of this instrument. It is both water and drop resistant, making it rugged and ideal for strenuous operating situations.

The Raider records, displays, and analyzes spectral information in real time, providing quick and accurate radionuclide identification. This is made possible through state of the art micro-miniature electronics utilizing modern digital signal processing. A build-in GPS identifies the global position of the instrument and transmits this and other pertinent event information, including the spectra, identification results, picture and audio description of the incident, via its reach-back capability using Bluetooth© and/or WiFi communication channels.

The Raider will operate for extended periods of time on easily accessible, rechargeable or non-rechargeable AA batteries. An internal sensor will determine the type of battery in use and enable or disable the internal battery charger as appropriate. It takes only moments to remove depleted batteries, replace them with fresh ones, and continue operation. An internal Polymer Li-Ion battery secures critical information and will operate the unit while the AA batteries are being changed.

## FEATURES & BENEFITS

- Solid State CdZnTe detectors
  - Rugged
  - Stabilization not required
  - Excellent resolution at room temperature
- DSP based electronics
  - Excellent stability
  - High data throughput
- Web server interface for monitoring and configuring the Raider
  - Configure and monitor the Raider from any web browser PC
  - Software not required
- Water and impact resistant
  - Drop in a puddle; pick up and clean; continue operation
- Built-in GPS
  - Document incident and location
  - Reduces hand-written documentation
- Reach-back via Bluetooth© and/or WiFi communication
  - Supports DHS data standards
  - Real time specialist support of Raider findings
- High efficiency, moderated $He_3$ neutron detectors
  - Excellent for verification of radioactive material
  - Neutrons unaffected by traditional gamma shields
- Easily replaceable AA batteries
  - No need to return to base because of dead batteries

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|---|---|
| Gamma | Eight (8) 1 cm3 CdZnTe solid state detectors |
| ID Resolution | <3.5 % at 662 keV |
| Detection Sensitivity | ≥ 6 cps/µR/h for Cs137 |
| ID Sensitivity | ≥ 0.75 cps/µR/h for Cs137 |
| ID Energy Range | 25 KeV to 3 MeV |
| Categorizes radionuclide | As Innocent, Suspicious or Threat |
| Isotope library | Meets or exceeds Homeland Security requirements |
| Dose rate energy range | 50 keV to 3 MeV |
| Dose rate Range | 5 µR/h to 100 mR/h |
| Over-range response | up to 5 R/h |
| Throughput | >100 k cps |
| Spectrum memory | 2048 channels |
| Neutron (optional) | Two (2) He3 detectors, 0.5” by 1.62” @ 15 atm. |
| Energy Range | Thermal to 10 MeV |
| Sensitivity | 6 cps/nv ± 20% |
| Flux range | 3.0*10-3 to 3.0*104 nv |
| Alarm Levels | Three (3) gamma, two (2) neutron, adjustable |
| Display | Primary 3.5” TFT LCD, 240 W x 320 H pixels, 64 k colors; Secondary OLED display of dose rate and neutron cpm |
| Protection Class | IP67 |
| GPS | Built in sensor |
| Reach-back | via Bluetooth® DUN or WiFi networking devices |
| Batteries | Primary; Three (3) AA NiMH or Alkaline, up to 2.7 Ah capacity, built-in charger Secondary; Internal rechargeable Polymer Li- Ion, 0.6 Ah, Low battery notification at 20%, alarm at 4% |
| External Power | PC USB or 1.5V/1.5A from external supply (provided) |
| Operating Time | Up to 50 h in Surveillance mode; Up to 10 h in Finder mode; Up to 6.5 h in Spectroscopy mode All dependent on battery type used and charge status |
| Charging Time | 5 to 12 h, depending on battery status and |
| | power supply |
| Interfaces | USB 2.0, Bluetooth©, WiFi, IEEE 802.11 b/g |
| Camera | 640 x 480 pixels |
| Weight | 1.4 lbs (650 g) |
| Dimensions | 5.9” x 3.35” x 2”, (150 x 85 x 50 mm) |
| Temperature Range | -4°F to +122°F (-20 °C to +50 °C) |
| Memory | 4 Gigabyte solid state memory |
| Operation | Four (4) buttons to operate plus one (1) for power |
| Web Server Interface | For remote monitoring and configuration of Raider |

## FEATURES & BENEFITS

- Circuit senses battery type
  Internal sensor determines type battery in use
  Eliminates mistakes i.e. charge non rechargeable batteries
- Energy range from 25 KeV to 3 MeV
- rate Range from 5 µR/h to 100 mR/h, energy compensated dose rate algorithm
- High Resolution color display
- Convenient four (4) button operation
- Light Weight and Compact Size
- Built-in camera and voice recording for incident documentation
- Visible, audible and proportional tactile alarms
- Holster included
- 4 GB memory for incident recording


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