PRODUCT OVERVIEW

radHUNTER™

HANDHELD RADIONUCLIDE IDENTIFICATION DEVICE

The radHUNTER™ is an extremely sensitive and accurate digital hand-held gamma radionuclide identification device (RIID). It is the culmination of over eight years of development of micro-miniature, digital signal processing electronics; operating power conservation; and advancements in the scintillation detector, radionuclide template matching identification algorithm. The radHUNTER development was supported in part by the U.S. Department of Homeland Security (DHS) / Domestic Nuclear Detection Office (DNDO), Human Portable Radiation Detection System (HPRDS) program.

Available in two configurations (NaI and LaBr), the radHUNTER is able to quickly detect, rapidly locate, accurately measure and precisely identify sources of contamination from their gamma radiation signature.

The radHUNTER-N uses a 0.75" thick by 4" diameter NaI(Tl) detector while the radHUNTER-L uses a 1.5" by 1.5" $LaBr_3$:(Ce) detector. Both instruments come with a GM tube for high gamma dose rate measurements and a sealed He^3 detector with moderator for neutron detection. Each instrument is supplied in a carrying case with recharging unit, communication cables, synchronization and analysis software.

Variations in normal operating conditions can affect the performance of RIIDs with scintillation detectors such as NaI and LaBr. Dramatic temperature variations can affect the scintillation detector and/or the PMT and can also cause instabilities and non-linearities in the electronics. In addition, high count rates can impact the peak position in a spectrum. The radHUNTER instruments have been developed to correct all these circumstances through automatic calibration and continuous LED stabilization.

FEATURES

- Hand-held Radionuclide Identification Device (RIID)
- Quickly survey trucks, cargo containers, cars and more for the presence of radiation
- Rapidly determine the primary location of the radiation
- Determine the Isotope identification in as little as a few seconds
- Categorizes the radiation as Innocent, Suspicious or Threat
- Alarms on doserate changes above background
- Continually stabilizes for temperature and other conditional changes
- Visible, audible and tactile alarm annunciators
- Reach-back via Ethernet with event data

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RADHUNTER-N

NaI(Tl) Detector	4" dia. x 0.75" thick (101.6x19 mm)
Sensitivity	2200 cps/μSv/h
Typical Resolution	NaI(Tl) 8% for Cs^{137} 662 keV
Dimensions	4.9" x 7.6" x 12.6" (125x192x320 mm)
Weight	6.4 lbs (2.9 kg)

RADHUNTER-L

$LaBr_3$:(Ce) Detector	1.5" dia. by 1.5" thick (38x38 mm)
Sensitivity	500 cps/μSv/h
Typical Resolution	$LaBr_3$:(Ce) 3.5% for Cs^{137} 662 keV
Dimensions	3.7" x 9.1" x 12" (95 x 230 x 305 mm)
Weight	5 lbs (2.3 kg)

COMMON SPECIFICATIONS

Electronics	DSP (Digital Signal Processing) based
Energy Range	20 keV to 3 MeV
Throughput Rate	≥250 k cps
Spectrum	2048 channels
Spectral Data Storage	≥4 GB SD memory card
Stabilization	LED peak stabilized
Stabilization Accuracy	±1% for temp. change rate of <0.9°F (0.5°C) per min.
Corrections	On-line spectra linearization
Dose Rate Range	0.01 μSv/h to 1 Sv/h
Dose Range	0.1 μSv to 1 Sv
Extended Dose Rate Detector	GM Tube (Energy compensated)
Neutron Detector	He^3, 0.75" by 3", 8 atm
Operating Temp.	-4 °F to +122 °F (-20 to +50°C)
Humidity	Up to 100% non-condensing at ambient temp of 104 °F (40°C)
Shock	According to ANSI N42.34
Inputs	DC Power/charger - 9V DC; 2A
Outputs	Ethernet - RJ-45; 10, 100 Mbit/s; USB - 1.1; Audio Jack - 3.5 mm Stereo
Battery	Two power packs with four NiMH batteries @ 2650 mAh in each
Operating Time	>8 hours (full charge)
Charging Time	6 hours (empty to full)
Battery Charger	Output - 9 V DC; 3A Input - 100-240 VAC; 50-60 Hz; 700 mA
Display	Transmissive Color TFT LCD Size - 240x320 pixels Brightness - Typical 320 cd/m2
GPS	Built-in GPS receiver; Position accuracy <5 m (dep. upon no. of visible satellites)
Reach-Back	Via Ethernet comm. to computer

COMFORTABLE TO HOLD AND EASY TO OPERATE

- Ergonomically designed for comfortable grip
- Easy operation with hazmat gloves
- Two button operation for menu navigatation
- Starts in convenient "find and identify" mode
- Real time visual, audible and tactile alarms
- Isotope-specific indicators
  - Personal Hazard: All 4 LEDs blinking
  - Threat: Blinking red LED, tactile & audio
  - Suspicious: Blinking yellow LED, tactile & audio
  - Innocent: Green LED on
- Isotopes are labeled as NORM, industrial, medical or SNM
- Expert mode
  - Gamma spectrometer functions
  - Change settings and operational parameters

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ICx Technologies
2100 Crystal Drive
Suite 650
Arlington, VA 22202

T + 1.877.692.2120

www.icxt.com

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