



HDS-101 G/GN

Handheld Search and Isotope
Identification Device



Nuclear
Power



Homeland
Security
& Defense



Industrial and
Manufacturing



Healthcare



Labs and
Education

OVERVIEW

HDS-101G/GN are handheld devices designed to search for and identify radioactive materials and to respond to radiological threats such as illicit trafficking and RDDs.

They are able to identify radionuclides and classify them as medical, industrial, naturally occurring radioactive materials (NORM) and special nuclear materials (SNM).

They can be used to detect, localize and characterize threats during radiological surveys or for secondary screening as perfect complement for installed radiation detection portals.

The HDS-101G/GN are ideally suited for First Responders, Border & Customs inspectors, Law Enforcement Officers, Site Security in critical infrastructures, and for all applications related to the control of radioactive and nuclear materials.

VERSIONS:

- HDS-101G: gamma version
- HDS-101GN: gamma and neutron version

KEY FEATURES

- Gamma & neutron independent measuring channels
- Wide gamma measurement range
- Very high sensitivity and fast response
- Detection threshold relative to background level and dose rate safety alarm
- Real time rejection of sudden background variation (VBS algorithm)
- Automated spectra acquisition on alert and automatic identification (NMD algorithm)
- Clear discrimination of risk categories
- LCD display with backlight
- Spectrum display
- Visual and audible alarms
- Wireless communication interface
- Designed to meet/exceed IAEA, IEC, ANSI standards

NUCLEAR CHARACTERISTICS

Detectors:

- CsI(Tl) scintillator for spectrometry and low gamma dose rate measurement
- Silicon Diode for high gamma dose rate measurement
- Lil (Eu) scintillator for neutron measurement

Energy range:

- 30 keV to 3 MeV (gamma and X-rays)
- 0.025 eV to 15 MeV (neutrons)

Measurement and identification range (gamma):

- 0.01 μ Sv/h to 100 μ Sv/h (1 μ rem/h to 10 mrem/h)

Extended gamma range:

- Continuous: 0.1 mSv/h to 10 mSv/h, 10 mrem/h to 1 rem/h
- Temporarily: up to 1 Sv/h (100 rem/h)

ALGORITHM PROCESSING

- Continuous spectra acquisition (0.2s time slot) and stabilization without source
- Continuous dose rate and count rate comparison to background
- Varying Background Suppression algorithm (VBS) continuously analyses the spectra shape and rejects alerts due to sudden background changes
- NORM Medical Discrimination algorithm (NMD) categorizes and identifies up to 4 isotopes simultaneously

NORM:	40K, 226Ra and daughters, 232Th and daughters
Medical:	18F, 51Cr, 67Ga, 75Se, 99mTc, 111In, 123I, 125I, 131I, 133Xe, 201Tl
Industrial:	22Na, 57Co, 60Co, 133Ba, 134Cs, 137Cs, 152Eu, 192Ir, 241Am, Bremsstrahlung
SNM:	233U, 235U, 237Np, 238U, 239Pu

- Cumulated spectra can be triggered by alert detection or on request

ACCESSORIES

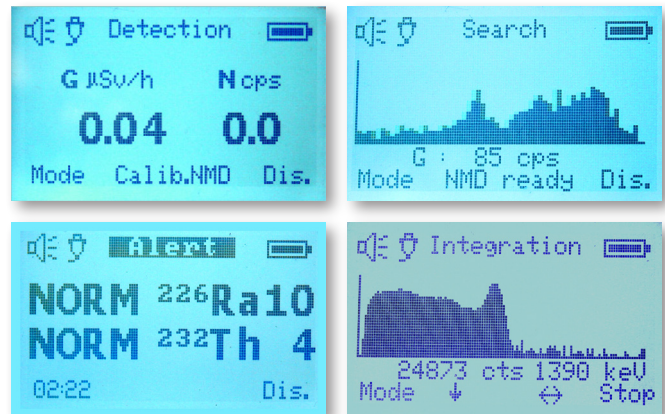
- Shoulder strap
- USB cable
- Transportation case
- HDSMASS and SMI software
- Power supply/charger/wall or car cradle

ELECTRICAL & MECHANICAL CHARACTERISTICS

- Power supply: 6 x AA batteries (Ni-MH rechargeable), built-in charger
- Battery life time: 24 hours (Bluetooth deactivated)
- Dimensions: 280 mm x 78 mm (11 in x 3.1 in)
- Weight: 1500 g (52.9 oz)

FUNCTIONAL FEATURES

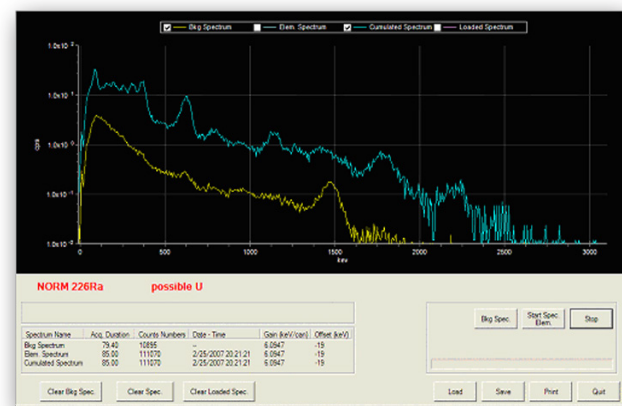
- Three operation modes: detection, search and integration
- Three user's profiles: routine, expert, custom
- Alert threshold configurable for dose rate and/or number of sigma level increase
- Radiation safety alarm
- LCD display with backlight
- Pre-loaded languages
- Memory to store more than 1000 events/ measurements and over 100 spectra in different modes
- Real time data and spectrum transmission
- Bluetooth®, RS232 and USB interfaces



- Audio output for earphone
- Designed to meet/exceed ANSI 42-33, Type I & II and to IAEA standards

ENVIRONMENTAL CHARACTERISTICS

- Temperature range: -20°C to 50°C (-4°F to 122°F)
- Humidity: < 90% at 42°C (108°F)
- EMI, shock, vibration and drop resistant
- Water protection (IP54)
- CE compliant (RF susceptibility 3 V/m)



HDSMASS software spectra

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