

Master your nuclear



## NUCLEAR & RADIOPROTECTION INSTRUMENTATION

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Radiation detectors  
Signal processing electronics  
 $\alpha/\beta$  counters  
Accessories

**HTDS**  
Hi-Tech Detection Systems

# HTDS YOUR PARTNER

## Focus on

HTDS offers a complete range of nuclear instrumentation and radiation protection equipment solutions, as well as various complementary solutions in the nuclear sector (Sources, Shielding, Phantoms, Cargo Control Equipment).

With our local presence, proximity to our customers, we provide sales and installation, training and maintenance services for all nuclear instrumentation and radiation protection equipment offered in our catalog.

### A PERSONALISED SUPPORT

HTDS accompanies you at all stages of the implementation of your project:

- Writing / specification studies
- Technological proposal
- Marketing
- Installation
- Maintenance

## RADIATION DETECTORS

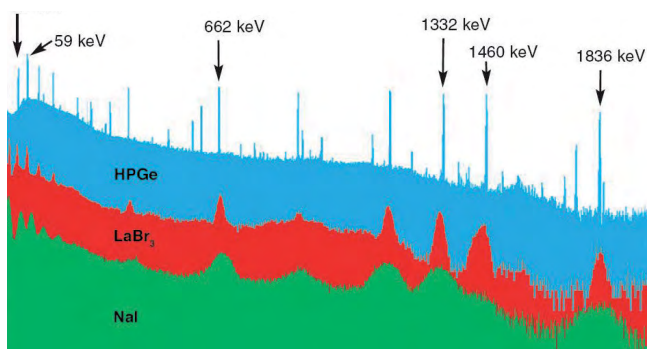
### GAMMA RADIATION DETECTORS

Gamma emission is the name given to the electromagnetic radiation produced by the de-excitation of an atomic nucleus resulting from a disintegration. This emission process is called gamma radioactivity.

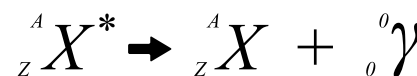
HTDS offers many specialized detectors to measure this radiation and perform spectrometry to identify radionuclides.

### APPLICATIONS

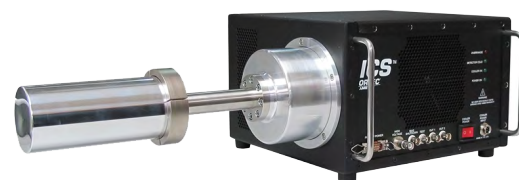
- Environmental control
- Food control
- Security
- Medical
- Research



Comparison of a spectrum of HPGe, LaBr3 (Ce), and NaI



- HPGe semiconductor detectors
- NaI scintillation detectors
- LaBr3 scintillation detectors



### HPGe Semiconductor and detectors

HTDS offers a wide range of ultra pure germanium detectors to cover the majority of gamma spectrometry applications :

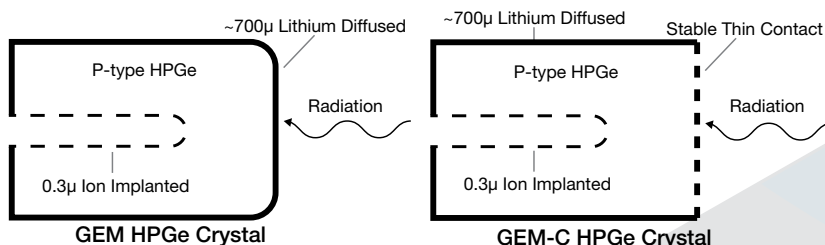
- Detection range from 3 KeV to more than 10 Mev
- Types P and N
- Well-type, planar ...

## Focus on

### NEW: PROFILE S and C

The new technology developed by ORTEC can detect lower energies for an increased efficiency:

- Energy range: 3 keV - 5 MeV
- Specified at 5.9 keV
- Better resolution and better performance
- Optimization of Peak Shape, Peak to Compton and the diameter of the input window



# TO MASTER YOUR NUCLEAR

## HPGe Detector Coolers

Germanium detectors need to operate at very low temperatures. HTDS offers 3 different technologies :

### Conventional cooling with liquid nitrogen

Conventional liquid nitrogen tanks in different configurations (30L with high output or low output, portable versions, etc). For a simple solution and optimal resolution.

### Hybrid cooling by nitrogen recycling

Liquid nitrogen recycling system: MÖBIUS.

To maintain the advantage of nitrogen cooling while enjoying a minimum autonomy of 2 years.

### Electric cooling

- All-electric cooling system: ICS (PopTop and streamline)
- Ideal to completely overcome the constraints related to liquid nitrogen
- Guaranteed detector performance without any degradation or vibration

## Nal (TI) scintillation detectors

Nal crystals are suitable for analysis of X-rays and Gamma at room temperature. Easy to use and cost-efficient, it is an ideal solution for applications requiring resolutions up to 7%.

The crystals are available in 3 standard sizes (other sizes on request) :

- 1" x 1": 0.17 @ 0.5 MeV
- 2" x 2": 0.75 @ 0.5 MeV
- 3" x 3": 2.00 @ 0.5 MeV

## LaBr3 (Ce) Scintillation Detectors

Detectors equipped with Lanthanum Bromide, also called LaBr3, are the new generation of gamma-X detectors by inorganic scintillator. They increase the resolution of a spectrum and have a faster decay time.

HTDS offers a size range from 1 "x 1" to 3 "x 3".

## CZT Semi-conductor Detectors

Systems equipped with CZT detectors represent an alternative to conventional crystals. More compact, they combine a very good resolution (about 3.5%) and an incomparable performance at high counting rate.



### APPLICATIONS

- Environmental measures
- NPP measurements
- Medical field



### Focus on

## HPGe SPECTROMETER FOR FOOD CONTROL

ORTEC's FoodGuard systems enable you to detect and analyze all the risky radioactive elements in your food production. These systems ensure compliance with the traceability standards required by sanitary authorities.

- Fast and accurate identification of radioactive elements
- Lead protections
- Data logging, spectrum analysis and editing software report

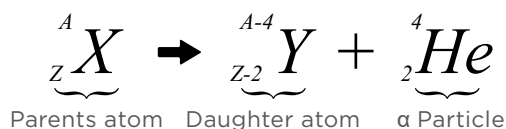




# HTDS VOTRE PARTENAIRE

## ALPHA SPECTROMETERS

Alpha radioactivity results from the decomposition of an atomic nucleus into a helium particle "He" and a daughter atom.



HTDS markets the solutions of recognized specialists in alpha and analysis detection.

- Wide range of detectors
- Electronics adapted to your applications
- Selection of reputed software on the market

The ORTEC  $\alpha$ -suite range combined with our high performance silicon detectors will allow you to carry out all your alpha spectrometry applications.

- All-in-one instrument (vacuum, power supply, MCA ...)
- Multiple configurations (size and number of chambers' analysis ...)
- Adapted and recognized software



## APPLICATIONS

- Analysis of environmental samples, radiochemical ...
- Analysis of charged particles in nuclear physics, chemistry and space physics
- Particle identification in telescopes (time of flight measurement) / particle backscatter
- Heavy ion spectrometry and time-of-flight
- Spectrometry of charged particles of medium energy
- Determination of the energy and position of charged particles

## Focus on

### ALPHA/BETA COUNTERS

HTDS and its partners offer you efficient and cost-efficient solutions for Alpha and Beta counting.

- Technologies : gas proportional counters and scintillation counters
- Manual or automatic solutions
- Mono or multi-detector solutions



## APPLICATIONS

- Research
- Environmental control
- Vehicle control
- Inspection of persons



# TO MASTER YOUR NUCLEAR

## ELECTRONIC SIGNAL PROCESSING

For people working with modular NIM analog electronics or wishing to integrate newer models based on digital DSP technology, HTDS offers a comprehensive catalog of signal processing solutions.

### ANALOGUE SOLUTIONS - NIM MODULES

HTDS offers ORTEC's range of NIM modules to respond to meet different spectrometry, timing, flight time, counting, coincidence and other experiments.



### DIGITAL / INTEGRATED SOLUTIONS

HTDS offers digital ORTEC electronics to respond to the different experiments of spectrometry.



#### digiBASE: integrated PMT base

Built-in high performance electronics with Ethernet or USB connection compatible with all PMT and scintillators.

#### DSPec: spectrometer in workstation

Built-in digital DSP-based electronics for HPGe detector: HV, signal shaping, MCA ..

#### digiDART: portable spectrometer

Portable Gamma Spectrometer for HPGe or Scintillation Detector.

#### APPLICATIONS

- Alpha or gamma spectrometry chains
- Applications of nuclear physics
- Timing
- Flight time



## ANALYSIS SOFTWARE

### SPECTROMETRY SOFTWARE

To complete our different nuclear spectrometry solutions, HTDS offers various dedicated software : for Alpha or Gamma application functions for various geometries, compatible with systems of all brands.

#### Maestro

Reference software for evaluation and spectrometry acquisition. Maestro will integrate perfectly embedded in your environment.

#### GammaVision / AlphaVision

Emulation, acquisition and analysis software for gamma / alpha spectrometry (deconvolution software).

#### LVIS

Emulation, Acquisition and Analysis Software for Gamma Spectrometry (deconvolution software).  
Software compatible with the ANSI, ASME and ISO 11929 standards.

#### Angle

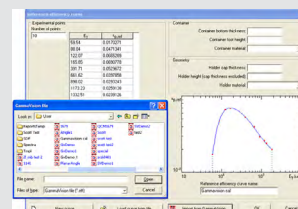
Angle modeling software to create efficiency curves for gamma spectrometry system with HPGe detector.

Other software available on request ...



#### APPLICATIONS

- Environmental control
- Nuclear medicine
- Radiation protection people
- Physics research nuclear
- Nuclear safety



# HTDS YOUR PARTNER

## FIELD ANALYSIS SOLUTIONS

From simple personal dosimeters and portable gamma spectrometers to environmental control beacons, our solutions cover a wide range of needs in various fields: military, industrial, medical, security and scientific.

### PORTABLE SOLUTIONS

#### Radiametry and dosimetry

HTDS offers a full range of radiation protection solutions for the accurate detection and measurement of doses and dose rates.

- Radiation detected : X, Gamma, Alpha & Beta
- Robust, lightweight and compact solutions
- Easy to use and intuitive interface



#### IdentiFINDER : multitask spectrometers

The IDENTIFINDER range is widely used for the presence control of radioactivity on industrial sites, ports or military zones.

- 4 detectors available : CZT, NaI, LaBr3 and CsI
- 4 functions: detection, location, measurement and radionuclides identification
- Automatic calibration, continuous stabilization and long battery life
- Visual, audible and buzzer alarms
- Versions without radioactive source available



#### DETECTIVE : high performance spectrometers

The Detective is used in the detection and prevention of illicit trafficking of nuclear material in ports and border crossings. To date, it is the most advanced RID available on the market.

- Gamma spectrometry, neutron detection and dose rate measurement
- Low consumption Stirling electric cooling and hardened cryostat
- Different sizes of detectors available
- GPS, Wifi, USB, ReachBack



#### Control in dismantling

The new Hotspot Locator Gamma Camera allows you to locate and visualize gamma radiation sources in a video image of the area being studied. Tested at Fukushima, the HSL 500 is a fast, reliable and highly accurate solution particularly suitable for decontamination and safety activities.



### FIXED SOLUTIONS

#### Vehicle control

HTDS offers a wide range of detection and identification solutions adapted to the control of vehicles (cars, trucks, containers ...). These controls have the peculiar capacity to be performed on systems in motion if necessary and with a very low rate of false positives results.

#### High precision vehicle control

The control of transit areas requires fast detectors and great sensitivity. HTDS offers modular and portable solutions.

#### SNM mode

Adapted solutions for the detection of illicit sources (SNM) emitting neutrons. Neutrons are detected from pressure tubes with helium 4 and gamma spectrometers (plastic, NaI and / or HPGe) allow to identify the source.

#### APPLICATIONS

- Seaports
- Border posts
- Critical areas
- Public places



# TO MASTER YOUR NUCLEAR

## INSPECTION OF PEOPLE

### ANTROPO-GAMMAMETRY SOLUTIONS

By offering the integration of Gamma HPGe or NaI detectors, as well as on-site mechanical adaptation and the supply of dedicated software, HTDS offers turnkey solutions for anthropogammametry applications.

- Complete configurations (armchairs, beds ...)
- HPGe or NaI detectors (lungs, thyroid ...)
- Counting of the whole body or part of



### CONTROL OF INDIVIDUALS: STRIDE

STRIDE detection units have been designed mainly for security installations in public places.

- Rapid detection of the possible presence of radioactivity
- Fast and accurate identification of radioactive elements
- Parametric sensitivity level
- Remote connection



## ACCESSORIES

HTDS offers a wide range of nuclear instrumentation accessories commonly used in nuclear facilities to support its customers with the provision and integration of comprehensive on-site solutions.

### LEAD CASTLES

In addition to our gamma spectrometry chains, HTDS offers a full range of lead castles that can be customized to suit the application.



### SAMPLERS

HTDS offers a range of autosamplers with integrated and customizable lead castle.

- 20 samples minimum. Adapted to your geometries
- Piloting from deconvolution software (LVIS, ...)
- Protection and security structure



### ISOCART

Complete mechanical system positioning for mobile Gamma measurements in-situ.

- Easy to operate with rubber tyres trolley
- HPGe detector support
- Sensor height, angle and tilt adjustment
- Dismantling the trolley to reach difficult places





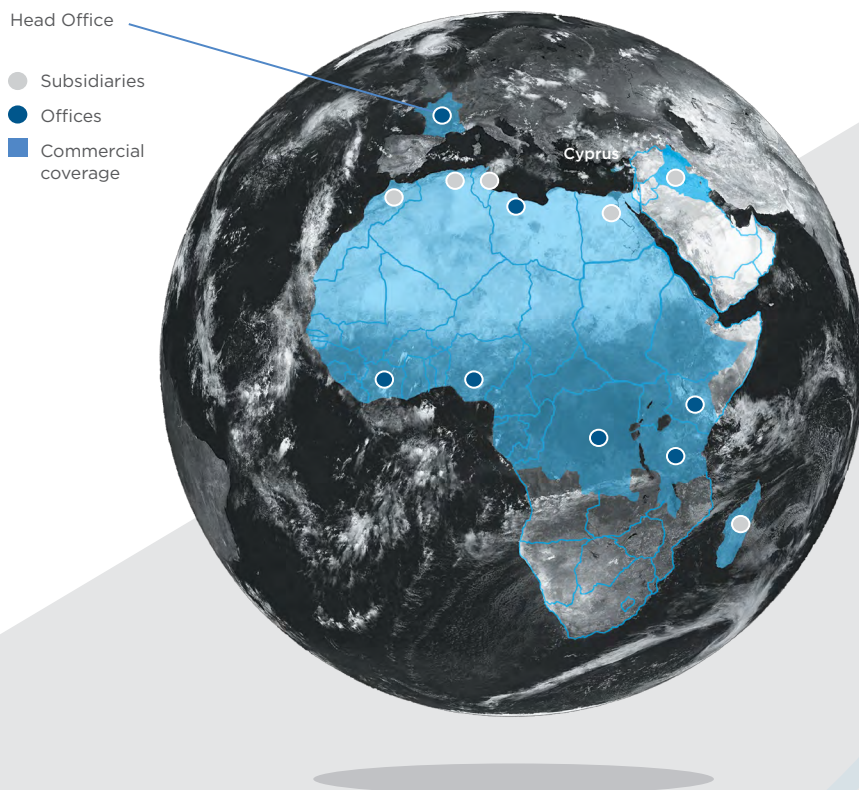
# OUR INTERNATIONAL NETWORK

HTDS (Hi-Tech Detection Systems) is a company specialized in  
the distribution and maintenance of high-tech detection  
systems in France and abroad.

HTDS offers a full range of detection solutions dedicated to the following areas:  
Security - Product Control - Analytical Sciences -

Nuclear and Radiation Protection - Signal Processing - Optoelectronics

HTDS's exclusive partners for nuclear & radioprotection instrumentation are recognized as world leaders in their field.



For a responsive service, tailored to your needs, HTDS has a network of subsidiaries, each with a team of specialized technicians and a complete stock of spare parts. A dedicated stock of equipment for your occasional rental needs is also available.

## ALGERIA

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**HTDS**  
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