Products & Solutions for Military Customers

NUCLEAR MEASUREMENT SOLUTIONS FOR SAFETY, SECURITY & THE ENVIRONMENT

(U.S. Army photo by Sgt. 1st Class Adelita Megal)

WWW.CANBERRA.COM
CANBERRA is committed to providing radiation measurement solutions to the worldwide military community that meet or exceed your unique requirements. Through our partnership with military planners and engineers, CANBERRA gains an in-depth understanding of your needs and applies best technologies and design practices to create specifically-tailored solutions.

The RadGuard™ family offers products, systems and services for military applications:

- Safety
- Health Physics
- Security

The RadGuard family delivers unmatched quality, accuracy, reliability and reproducibility designed to exceed our customers’ expectations. These solutions are developed and supported by a staff with extensive and diverse experience in this field.

RadGuard represents CANBERRA’s deep commitment to the continual evolution of solutions for the ever-changing demands related to military applications — Detection Technology Protecting a Changing World.
Experience in Military Applications

CANBERRA has been in the business of designing, manufacturing and supplying products to military customers for over 25 years. During that time, we have delivered over 140,000 instruments to military and civil defense markets around the world.

Our instruments are standard equipment for US Army and NATO countries and have been successfully deployed by:

- UK Ministry of Defense
- Italian Army, Navy and Ministry of the Interior
- US DoD and Civil Defense
- Canadian Department of National Defense (DND)
- Swedish Armed Forces
- Royal Netherlands Navy
- Danish Navy
- Taiwan Army
- and others

At the core of CANBERRA’s successful relationship with its military partners is a deep respect for the global safety and security missions each branch serves, as well as the common goal of preserving the lives of troops and the public. By adapting to the rigorous military performance specifications and standards demanded by its customers, CANBERRA has succeeded in producing long-lasting, rugged hand-held radiac systems and vehicle-based detection systems that operate as expected, every time.

CANBERRA is focused on bringing the very best technology to its military partners, allowing them to focus on their core missions. While its Military Center of Excellence is located in Oak Ridge, Tennessee, the company operates production, engineering and support facilities around the world. CANBERRA’s 1000+ employees are all focused on bringing the very best nuclear technology to your operation.
Shipboard and Vehicle-Based Systems

CANBERRA supplies highly-reliable monitoring systems for military vessels that provide continuous real-time radiological information with a centralized readout for informed decision making. The company also offers a range of rugged, single and multi-detector solutions suited for use with manned, unmanned and robotic platforms.

NASRAMS Shipboard Radiation Monitoring System

NASRAMS provides continuous real-time radiological information on board military vessels. The system detects and measures prompt gamma and prompt neutron dose, along with residual gamma dose rates.

- Detects and measures both prompt and residual (fall-out) gamma radiation and prompt neutron radiation
- 10 channel standard configuration
- Outstanding linearity over a wide dynamic range
- Ultra long detector life and calibration stability
- Operates in and withstands extreme environmental conditions as specified in MIL-STD-810

- Detector will not saturate in gamma fields to 10 Gy/hr
- Gamma Dose Rate (Residual) 0.01 μGy/hr to 10 Gy/hr
- Gamma Dose (Residual) 0.001 μGy to 10 Gy
- Mixed Gamma/Neutron Dose (Prompt) 5 cGy to 10 Gy
- Realistic training exercises available with programmable radiation simulation functionality
- Exercises are uploaded to the Main Indicating and Alarm Unit by way of a smart card which is pre-programmed by the training officer using Simulation Editor Software
Vehicle-Based Detection Systems

CANBERRA has extensive experience developing rugged vehicle-based mounts that accommodate our handheld and pocket meters and run on vehicle power. We can also provide tailored solutions to encompass more specific requirements. Previously implemented solutions include single and multi-detector systems integrated with:

- Manned and unmanned vehicle platforms
- Robotic platforms
- Chemical and biological detection platforms
- Command and control system communication
Handheld Meters

CANBERRA’s Handheld meters are designed for use by specially-trained units capable of responding to any accident/incident involving exposure. Multipurpose kits for Alpha, Beta, Gamma and (optionally) X-Ray radiation detection are available with a wide range of applications such as: weapons surveillance, Nuclear Accident Incident Response and Assistance (NAIRA) and routine monitoring for health and safety.

RDS-100

The RDS-100 Radiation Detection System offers comprehensive radiation management and unsurpassed reliability in a self-contained, portable system. This simple to operate, rugged, and lightweight equipment includes CANBERRA’s unique Time-to-Count technique which provides outstanding linearity over the entire dynamic range of the instrument – no compensation for high levels is necessary. The Radiac Meter included in this system is equipped with “SMART” technology, which allows any system probe or training probe to be interchanged and used immediately without calibrating. All calibration data is stored in the probes and read by the Radiac Meter upon connection. An optional GPS-based Large-Area Training System provides documented assurance that personnel are properly trained, without any exposure to radioactive materials.

The RDS-100 precisely duplicates the radiological performance and user experience of the military qualified AN /VDR-2 Radiac Set that was developed by CANBERRA, under contract to the US Army. The RDS-100 is built to meet Mil-Std 810 tests.

- Gamma Dose Rate – 0.01 μSv/hr – 99.9 Sv/hr
- Gamma Dose – 0.01 μSv – 99.9 Sv
- Alpha Dose Rate – 0–20 000 c/s
- Beta Dose Rate – 0–20 000 c/s

Standard Detector Compliment
- Beta-Gamma Probe
- Alpha Probe
- Beta (Pancake) Probe

Optional Detectors
- X-Ray Probe
- Optional configuration available for use with RDS-100 vehicle mount
ADM-300

The ADM300A(V1B) portable multi-functional survey instrument is rugged, reliable and designed for use in all environments. This meter will detect, measure and digitally display both dose and dose rate levels of Gamma and Beta radiation via self-contained Gamma and Beta detectors.

This instrument employs CANBERRA’s unique Time-to-Count technique to eliminate the dead time and saturation effects that are common with conventional Geiger Mueller detectors. This functionality allows wide range detection with unsurpassed accuracy and linearity.

When coupled with optional external “Smart” probes, the ADM300A(V1B) can be used to measure, store and display Alpha, Beta, Gamma and X-ray radiation. “Smart” probes store probe ID, calibration data and have an internal high voltage power supply.

This versatile instrument is optionally vehicle powered and mounted.

**RANGE**

- Low-Range Detector – 0.01 μSv/h to 50 mSv/h (Dose rate)
- High-Range Detector – 30 mSv/h to 100 Sv/h (Dose rate)
- Dose Rate – 0.01 μSv/h to 100 Sv/h for gamma rays. 0.01 μSv/h to 50 mSv/h for Beta radiation
- Accumulated Dose – 0.01 μSv to 100 Sv
- Dose Rate – ± 15% up to 100 Sv/h
- GPS support allows position coordinates to be saved when logging data
- Training Mode allows the ADM300A(V1B) to display a simulated radiation field as calculated from an attached GPS and a preset radiation pattern
- User default settings can be collected and stored internally
- RS-232 Serial and USB computer port

**Kits including survey instruments, probes and accessories are available in the configuration and color required to support your mission.**
Early personal radiac devices (AN/UDR-13) were mainly oriented towards expected field tactical radiation levels, with less consideration given to background sensitivity levels. Although this approach fits the battlefield needs well, new nuclear security threats have created a demand for more sensitive radiacs. These needs were met with the development of more sensitive models (AN/UDR-14, AN/UDR-15 and RGU-100).

CANBERRA’s RGU-100 was developed as a military-grade solution that offers comparable functionality and performance to program-specific* AN/UDR-13,-14,-15 radiacs. The RGU-100 has been nuclear hardened and designed for nuclear survivability.

**Pocket Meters**

The RGU-100 Military Pocket Radiac detects and quantifies prompt gamma and neutron dose as well as residual gamma dose and dose rate in support of both tactical and non-tactical use. This rugged dosimeter is equipped with a backlit LCD as well as presettable audio and visual alarms that provide clear, real time indications of radiological conditions in demanding environments.

The RGU-100 is derived from the military qualified AN /UDR-13,14,15 Radiac Sets that were developed by CANBERRA, under contract to the US Army. The RGU-100 precisely duplicates the radiological performance and user experience of the AN /UDR-14 and is built to exceed rigorous MIL-STD 810 requirements.

- Detects and quantifies prompt gamma and neutron dose as well as residual gamma dose and dose rate
- Residual Gamma Radiation – 0.001 uGy/ hr to 350 cGy/ hr dose rate and 0.001 to 999 cGy total dose
- Prompt Neutron And Gamma Radiation – 1 to 999 cGy total dose
- Uses time-tested “Time-to-Count” technology
- Infrared Optical Port for computer control and data downloads
- Consult specification sheet for colors and units available

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* The AN/UDR-13,-14,-15 models were designed for specific U.S. Military programs and are no longer available outside of these programs.
Simulation Training Packages

CANBERRA has partnered with Argon Electronics to manufacture simulators for users of selected CANBERRA radiation detectors.

- Radiological training simulator
- Modified CANBERRA radiacs work with ARGON simulation package
- Instruments simulate exposure to a real-life threat. Radiation simulators include technology to simulate Alpha, Beta, Gamma and also spectroscopy
- Trainer can remotely change the reading of the units, thus dynamically steer the reading during the training exercise

ARGON RDS-100-SIM Probe Set

The RADSIM RDS100 SIM-Probe Set combines the RADSIM BG-SIM-P, the RADSIM A-SIM-P and the RADSIM B-SIM-P in a single case set. The probes are designed for use with the CANBERRA AN/PDR-77 and RDS-100 survey meters. The advanced design enables you to use the simulator probe with your operational AN/PDR-77 and RDS-100 meter without the need to change the calibration of the actual instrument.

- RADSIM RDS-100 SIM-Probe Set
- For use with CANBERRA AN/PDR-77 and RDS-100
- Simulation of Alpha, Beta and Gamma response
- Responds to safe Alpha/Beta simulation sources that can be hidden on a person
- Simulation of partial and full decontamination
- Single instructor remote control for all three simulator probes
- No need to recalibrate your real instrument before or after use

Contact your local CANBERRA representative for information, or contact Argon directly at:

www.ArgonElectronics.com
Unique solutions for Military customers

RGR-100 Military Remote Gamma Sensor

RGR-100 is a small, weather-proof radiological sensor that can be deployed to supply prompt gamma and neutron dose as well as residual gamma dose and dose rate information as part of a larger unattended ground sensor network. This dosimeter is remote controlled via RS232 port with an external computer.

The RGR-100 also lends itself to use in military manned and unmanned vehicle platforms. The Sensor easily fits within the space-constrained interiors of aircraft and fighting vehicles.

» Separate detectors for prompt and residual radiation are combined to provide a single dose reading
» Residual Gamma Radiation – 0.001 μGy/ hr to 350 cGy/ hr dose rate and 0.001 to 999 cGy total dose
» Prompt Neutron And Gamma Radiation – 1 to 999 cGy total dose
» Uses time tested “Time-to- Count” technology
» Nuclear and EMP hardened circuit protection

Custom solutions for our military customers

As the missions of our military customers evolve, equipment needs can change. CANBERRA’s latest designs feature a flexible architecture that can accommodate your changing requirements. This built-in flexibility has enhanced our ability to communicate with other platforms, as well as enabled our instrumentation to be repackaged and integrated into containerized as well as installed CBRN systems.

Support for our military customers extends beyond standard radiac designs. For example, CANBERRA has delivered custom, ruggedized vehicle-based solutions that can accommodate a variety of probes. CANBERRA has also designed, prototyped and produced an upgrade kit to retrofit portal monitors used aboard Navy vessels. The kit included the latest detection electronics and software, delivered in a configuration that allowed the customer to maintain the footprint and hardware of the original monitor. CANBERRA’s design supported the customer’s requirement to maintain the existing shield geometry, while still modernizing software, detectors and other components.

With a range of technologies and an experienced team of professionals on staff, the successful design, manufacture and fielding of your unique military-grade solution is assured. Contact CANBERRA today to learn more about how we can meet your needs.
Total quality control

It is our Policy that: All products and services we offer will meet or exceed the specified requirements and anticipated expectations of our customers. This policy is supported at all levels within the organization.

Our approach to quality is modeled after the concept of Total Quality Control. This approach places the responsibility for quality of work on each employee. All employees are empowered to stop work or processes if they believe quality is in question, and they are encouraged to report quality issues immediately to management. The goal of this approach is 100% Customer Satisfaction.

By focusing on our chosen marketplace, continuously improving our products and processes, and constantly innovating, we believe we create the most value for our customers.