



Advanced Radiation Detection Equipment

- Electronic Dosimeters
- Personal Radiation Detectors
- Spectroscopic Personal Radiation Detectors
- Portable Monitors & Radioisotope Identifiers
- Radiation Fixed Monitors
- Combined Gamma Radiation and Chemical Agent Detectors
- Nuclear Protection Network System



Innovating Radiation Detection Technologies Since 1992

Electronic Dosimeters

Polimaster's range of modern Geiger-Mueller based direct-reading electronic dosimeters is designed for dose equivalent and dose equivalent rate measurements with alarm to warn when preset threshold levels are exceeded. These instruments are compact, light-weight, feature an extended battery life, and are equipped with non-volatile memory to record and store data which can be downloaded via infrared (IR) channel to a PC for further processing and analysis.



PM1203M

A simple and reliable dosimeter for a wide range of applications. Features additional function of alarm clock.

Dose rate range: 0.01 - 2000 $\mu\text{Sv/h}$
Dose range: 0.001 - 9999 mSv
Energy range: 0.06 - 1.5 MeV
Battery (V357x 2) lifetime: 12 months
Dimensions: 125 x 42 x 24 mm
Weight (with battery) : 90 g

1208/

Gamma radiation indicators combine a sensitive GM-detector with a stylish wristwatch. These instruments are water-resistant up to 100 meters and are ideal for industry professionals and the general public alike.

Dose rate range: 0.01 - 9999.99 $\mu\text{Sv/h}$
Dose range: 0.001 - 9999 mSv
Energy range: 0.06 - 1.5 MeV
Battery (CR 2032) lifetime: 12 months
Dimensions: 50 x 45 x 20 mm
Weight (without bracelet) : 98 g
IP68

1603 / , 1604 /

Professional compact dosimeters designed to measure dose and dose rate in a wide range. These devices are suitable for use in the harshest weather conditions and are available in wrist-watch or clip-on housings.

Dose rate range: 0.01 $\mu\text{Sv/h}$ - 6.50 Sv/h (PM1603A/PM1604A)
0.01 $\mu\text{Sv/h}$ - 13 Sv/h (PM1603B/PM1604B)

Dose range: 0.01 μSv - 9.99 Sv
Energy range: 0.048 - 6.0 MeV
Operating temperature: -20 up to +70 °C
Battery (CR 2032) lifetime: 9 months
Dimensions: 50 x 56 x 19 mm
Weight (with battery) : 85 g
IP67

1621/ / /

Professional X-ray and gamma personal dosimeters working in a wide energy range from 10 keV to 20 MeV. Models PM1621M/MA feature additional search mode and vibration and light alarms.

Dose rate range: 0.01 $\mu\text{Sv/h}$ - 0.2 Sv/h (PM1621/PM1621M)
0.01 $\mu\text{Sv/h}$ - 2.0 Sv/h (PM1621A/PM1621MA)

Dose range: 0.01 μSv - 9.99 Sv
Energy range: 0.01 - 20 MeV
Operating temperature: -40 up to +60 °C
Battery (AA) lifetime: 12 months
Dimensions: 87 x 72 x 35 mm
Weight (with battery) : 150 g
IP67

P 1610

Compact personal dosimeter for measurement of continuous and pulse X-Ray and gamma radiation. This instrument operates on a built-in rechargeable battery and is equipped with vibration, audio and visual alarms. Easy PC connectivity via USB.

Dose rate range: 0.1 $\mu\text{Sv/h}$ - 10 Sv/h
Dose range: 0.001 μSv - 10 Sv
Energy range: 0.02 - 10 MeV
Dimensions: 57 x 58 x 17.5 mm
Weight: 70 g

I 65



Personal Radiation Detectors

Polimaster offers a range of highly sensitive, versatile Personal Radiation Detectors (PRDs) for the detection and location of gamma and neutron radiation sources/emissions as well as dose rate evaluation. The instruments are equipped with CsI(Tl) detectors for detecting gamma radiation as well as LiI(Eu) or He-3 based detectors for neutron radiation detection. The PRDs have a non-volatile memory, an infrared interface for computer communication, and audio and external or internal vibration alarms, and are compliant with the majority of IAEA (ITRAP), ANSI N42.32, ANSI N42.33 (1) and IEC 62401 requirements.



Sensitivity for Cs-137: 100 cps/(μ Sv/h) or better
 γ - channel energy range: 0.033 - 3.0 MeV
Neutron channel energy range: thermal - 14 MeV
Dose rate range: 0.01 - 99.99 μ Sv/h
Battery (AA) lifetime: 1000 h
I 65

1401MA/GNA

Gamma (PM1401MA) and gamma-neutron (PM1401GNA) personal radiation detectors-rugged, sensitive and user-friendly, with a robust metal housing that makes these instruments ideal for harsh environment applications.

1703 /GNA

Compact, highly sensitive gamma and gamma-neutron personal detectors in a light-weight shockproof plastic housing, equipped with internal vibration alarm.

1703 -1

Combined personal radiation detector and dosimeter. The instrument contains two separate gamma detectors: CsI(Tl) scintillator provides fast response in search operations while Geiger-Mueller tube provides high dose rate coverage and accurate dose rate and dose measurements.

Spectroscopic Personal Radiation Detectors

Spectroscopic Personal Radiation Detectors are a new class of radiation equipment which combines advantages of the family of the highly sensitive Personal Radiation Detectors (PRDs) and the family of the Radionuclide Identification Devices (RIDs). The main purpose of the Spectroscopic Personal Radiation Detectors (SPRDs) is not only to search for radioactive and nuclear grade materials, but also eliminate nuisance alarms and evaluate a potential threat of the discovered radiation source to public by the isotope identification. The instruments' ability to communicate with a pocket PC or a smart phone via built-in Bluetooth connectivity makes it possible to identify radiation source remotely, allowing for safe, distant examination of the emitting source by the means of Polimaster identification software.



1401MB/GNB

Gamma (PM1401MB) and gamma-neutron (PM1401GNB) spectroscopic personal radiation detectors are designed to detect, locate and identify radiation sources under difficult working conditions. Their external hidden vibration alarm makes these instruments ideal for inconspicuous inspections and use in noisy places.

1703MB/GNB

Compact, highly sensitive gamma (PM1703MB) and gamma-neutron (PM1703GNB) spectroscopic personal radiation detectors. Housed in a shockproof hermetic case and equipped with internal vibration alarm.

Identified Radioisotopes:

- Medical: ^{18}F , ^{67}Ga , ^{51}Cr , ^{75}Se , ^{89}Sr , ^{99}Mo , $^{99\text{m}}\text{Tc}$, ^{103}Pd , ^{111}In , ^{123}I , ^{131}I , ^{153}Sm , ^{201}Tl , ^{133}Xe
- Naturally occurring: ^{40}K , ^{226}Ra , ^{232}Th and daughters, ^{238}U and daughters
- Industrial: ^{57}Co , ^{60}Co , ^{133}Ba , ^{137}Cs , ^{192}Ir , ^{226}Ra , ^{241}Am
- Nuclear: ^{233}U , ^{235}U , ^{237}Np , ^{239}Pu

Hand-held Search Instruments & Radioisotope Identifiers

Polimaster produces a range of state-of-the-art multifunction instruments equipped with multiple detectors (internal or external) for locating, assessing, and identifying various radiation sources.

1710 /GNA

Extremely sensitive search instrument with a larger detector for improved sensitivity. Its shock-proof, hermetically sealed metallic housing makes these instruments suitable for use in the harshest working environments.

1701

Designed for detection and location of gamma radiation sources. This instrument is ideally suited for inspection of scrap metal, building materials and construction waste. Detector equipped with a set of headphones to enable operation in noisy places.

1402

Multifunction instrument with extension probes. The processing block of this instrument can be completed with a variety of detectors for alpha, beta, gamma and neutron radiation measurement. PM1402M can be supplied as an all-inclusive set or customized to customer's specification.

BD-01 γ search:

Sensitivity: $200 (s^{-1})/(\mu Sv/h)$; energy range: 0.06-1.5 MeV

BD-02 γ spectrometry:

Dose rate range: 0.1 - 200 $\mu Sv/h$; energy range: 0.06-1.5 MeV

BD-03 γ measuring:

Dose rate range: 0.15 - $10^5 \mu Sv/h$; energy range: 0.02-1.5 MeV

BD-03-01 γ measuring:

Dose rate range: 10 - $10^7 \mu Sv/h$; energy range: 0.08-1.5 MeV

BD-04 neutron search:

Dose rate range: 1 - 5000 $\mu Sv/h$; energy range: thermal - 14 MeV

BD-05 α - β measuring:

α -flux density measurement range: $1 - 5 \cdot 10^5 \text{ min}^{-1} \text{ cm}^{-2}$

β -flux density measurement range: $10 - 10^6 \text{ min}^{-1} \text{ cm}^{-2}$;

Energy range: 0.15 - 3.5 MeV

1401

This Polimaster search instrument provides its users the ability to detect alpha, beta, gamma and neutron emitting sources. The identification function can be augmented by means of hand-held PC and identification software. The PM1401K is Polimaster's most versatile and light instrument in its category, equipped with Bluetooth channel for remote communication and operation, allowing user to keep safe distance from the emitting source.

Search γ -channel energy range: 0.06 - 3.0 MeV

Sensitivity for Cs-137: 200 cps/ $(\mu Sv/h)$ or better

Dose rate range: 0.1 - $10^5 \mu Sv/h$

Measuring γ -channel energy range: 0.015 - 20 MeV

γ -flux density measurement range: $15.0 - 10^5 \text{ min}^{-1} \text{ cm}^{-2}$

β -Flux density measurement range: $6.0 - 10^5 \text{ min}^{-1} \text{ cm}^{-2}$

Battery (AA) lifetime: 600 hours

Weight (with battery): 650 g

IP65

1405

The instrument is designed for the detection and measurement of beta and gamma radiation, comply with the requirements of radiation control of banknotes in banks.

γ - and x-ray radiation dose rate measurement range: 0.1 $\mu Sv/h$ - 100 mSv/h

β -flux density measurement range: $10 - 10^3 \text{ min}^{-1} \text{ cm}^{-2}$

Energy range: 0.05 - 3.0 MeV

Operating temperature: -10 up to +50 °C

Battery (AAx2) lifetime: 12 months

Dimensions: 80 x 127 x 37 mm

Weight (with battery): 250 g

Radiation Fixed Monitors

These types of detectors are widely used for detecting radioactive materials that may be illicitly trafficked or inadvertently moved between international land borders, maritime ports, airports, and similar locations, as well as at recycling plants or controlled access facilities. Fixed installed monitors are intended for radiation monitoring of vehicles, pedestrian and cargo. The networking capability of these monitors allows for collecting and transferring data to a remote control center.



1710 /GNC

Search gamma and gamma-neutron instrument with networking capability. Can be wall-mounted and connected to a network. Ideal solution for building and perimeter control.



5000

Fixed-installed portal monitors for radiation monitoring of vehicles, trains, pedestrians and commodities at boarder crossings. These monitors are capable of detecting gamma and gamma-neutron radiation sources. Modular design of the monitors allows for flexible system configuration according to customer's specification. The system is completed with modern surveillance cameras, remote control and software.

Combined Gamma Radiation and Chemical Agent Detectors

These instruments are designed to detect gamma radiation sources and chemical agents'. Instruments are equipped with a Geiger-Mueller detector for radiation detection and ionizing chamber with a beta Ni-63 source for chemical agent detection. Compact and light these instruments are ideal for radiation and chemical survey.



γ - channel:

Dose rate range: 0.1 μ Sv/h - 5 Sv/h

Dose range: 1.0 μ Sv - 10 Sv

Energy range: 0.048 - 3 MeV

Chemical module sensitivity:

Organophosphorus substances, no less: $5 \cdot 10^{-5}$ mg/l for 15 s

Arsenic-containing substances, no less: $2 \cdot 10^{-4}$ mg/l for 5 s



2010

This instrument is designed for detecting gamma radiation and chemical agents' fumes. The device can detect and differentiate between organophosphorous and arsenic-containing compounds, as well as continuously monitor radiation background and provide alarms when preset thresholds are exceeded.

2012

The device is a two-in-one instrument featuring chemical vapour detector and gamma radiation detectors in one unit. The device can detect and differentiate between organophosphorous and arsenic-containing compounds measure gamma dose and dose rate and provide audible, visual and vibration alarms when preset thresholds are exceeded. Its rugged metallic housing makes this detector suitable for military applications.

Contraband Detector



1401T

Small hand-held contraband detector for search of concealed contraband items, such as explosives, drugs, guns etc., in the tires, walls and hollows. PM1401T is also able to detect gamma radiation from radioactive and nuclear materials and can be used as an additional Personal Radiation Detector (PRD) PM1401MA at customs checkpoints for preventing illicit trafficking of the radioactive and nuclear materials. Recommended for use by Customs Officers, Border Patrol and Law Enforcement Agencies.

Nuclear Protection Network System (NPNET)

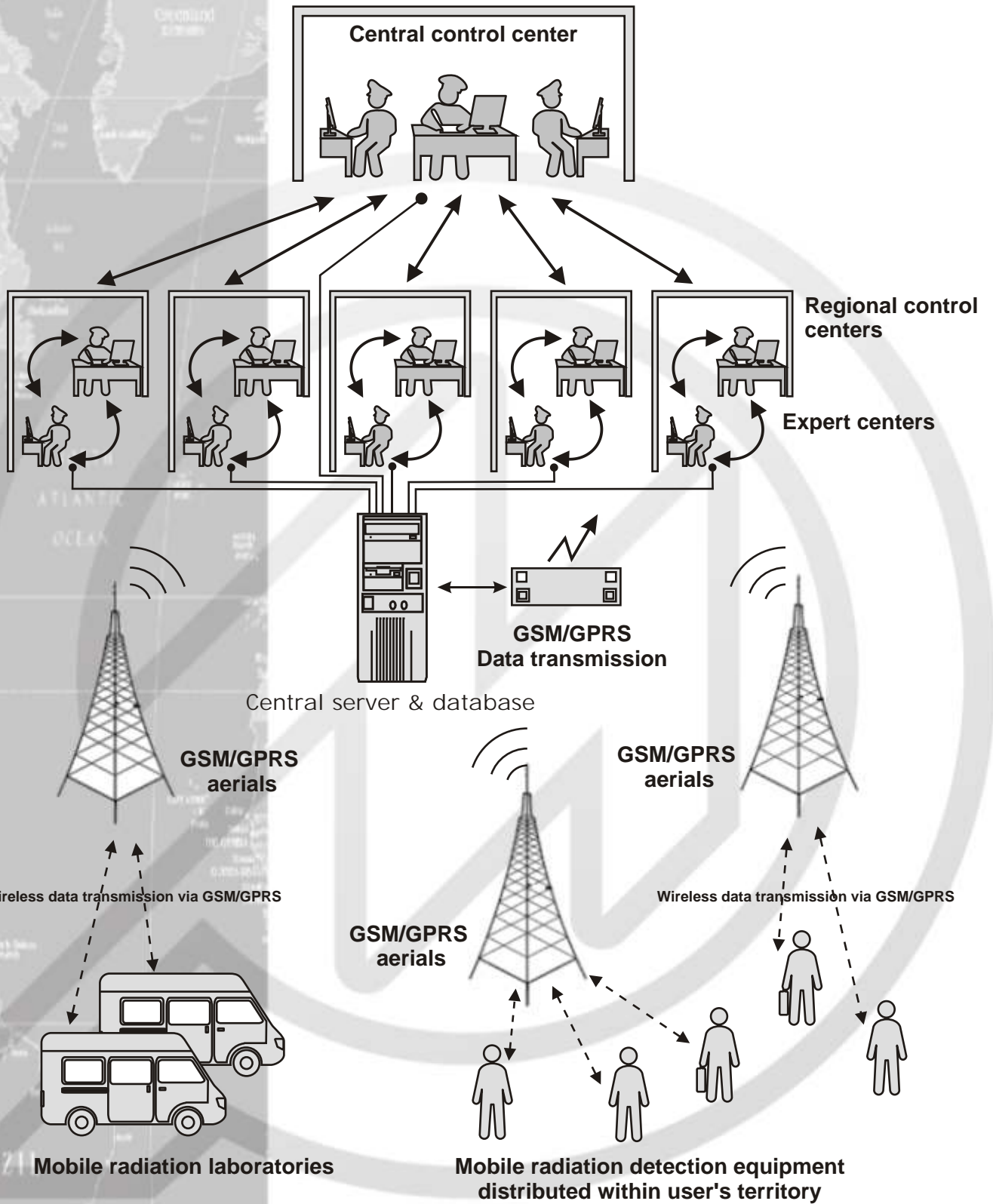
This is a unique system for radiation detection with on-line identification and transmission of gathered information to the control center, using Internet technology. The system is capable of tying up multiple instruments with network capability, such as PM1703MB/GNB, PM1401MB/GNB and/or PM1401K into a network with transferring real-time data to an expert control center for further analysis. The positioning of each instrument is plotted on a map at the control center using GPS technology.



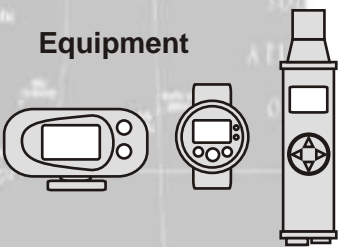
NPNET

- Integration of multiple mobile detectors and identifiers
- GPS positioning
- Remote Control Center
- Remote access and real-time operation



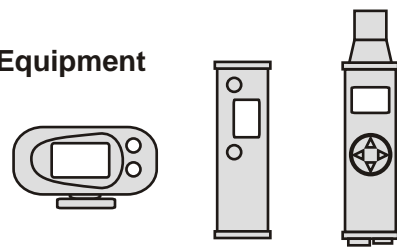


Equipment



Electronic Dosimeters (PM1603A/B)
 Spectroscopic Personal Radiation Detectors
 (PM1703GNB, PM1703MB)
 Radionuclide Identifiers (PM1401K)

Equipment



Spectroscopic Personal Radiation Detectors
 (PM1703GNB, PM1703MB, PM1401MB, PM1401GNB)
 Radionuclide Identifiers (PM1401K)

Polimaster is an established developer and manufacturer of radiation detection equipment since 1992 with its own regional manufacturing and distribution centers in Western and Eastern Europe, and North America. Polimaster has extensive experience in design, development and production of sophisticated electronic radiation detection equipment. Polimaster offers a wide range of radiation detection equipment from compact personal radiation dosimeters to large fixed-installed portal monitors. This equipment is capable of detecting, locating, measuring and identifying sources of radioactive emissions in different environments.

Main applications of Polimaster products include but not limited to:

- Prevention of illicit trafficking of radiological and nuclear materials;
- Prevention, detection, and response to terrorist or other malicious acts, such as illegal possession, use and transfer of radioactive materials;
- Protection of nuclear facilities and transport against sabotage;
- Emergencies response to accidents involving radioactive or nuclear materials;
- Controlling occupational exposure for professionals working with radiation sources in health care facilities, research institutions, nuclear reactors and their support facilities, nuclear weapon production facilities, and other various manufacturing settings;
- Controlling spread and transferring of radioactive materials at scrap metal recycling facilities and other industrial or domestic waste.

Main users of our equipment include but not limited to:

- Customs and Border Patrol
- Military
- Police
- First responders and Firefighters
- Security and Safety Agencies
- Nuclear Power Stations
- Research Laboratories
- Health Care and other Industry Professionals

For more information and detailed technical specifications please contact our offices in your region or visit our global web site at <http://www.polimaster.com>

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