Spectroscopic Personal Radiation Detector (SPRD)

Features:

- Meets demands for first responders and reachback support
- Highly sensitive scintillation detectors
- Easy to use, two button operation doesn't require any training
- USB, Bluetooth or IRDA communication
- Shockproof hermetic case
- Designed to minimize electro magnetic interference from portable radios, cell phones
- Integrated wireless transmission of critical data

Applications:

- First responders
- Customs and border patrol
- Police and Fire
- Emergency teams
- HazMat teams
- Security guards, Military

Model 1703MB/GNB

1703MB Gamma with Spectroscopic Gathering
1703GNB Gamma and Neutron with Spectroscopic Gathering

Breakthrough in Technology

Berkeley Nucleonics Corporation (BNC) introduces a new generation of Gamma / Gamma-Neutron Pagers to the emergency response community. These sophisticated devices combine the rugged, simple interface the industry expects with unprecedented reachback support and analytical processing power. While operating much like conventional radiation detection pagers, SPRDs collect and archive spectroscopic data.

Spectral gathering functionality allows for central command to become the expert and analyze the data from radiological incidents. The critical spectral data files are wirelessly transmitted from the pager to any windows mobile compatible PDA for further analysis, isotope identification or emailing to homeland security.

Software Solutions

Bluetooth SPRDs are compatible with several software packages which make advanced features easy to use by personnel at any technical level, from first responder to health physicist. Other commands, such as threshold adjustments or alarm silencing, can be accomplished quickly through the user-friendly applications. Software options are outlined below.

Poli-Terminal-IPAQ	Utility for IPAQ Smartphone	P/N 6982
This simple utility allows collection of data, local review of gamma (and neutron) detection levels, and transfer of information over network.		
Poli-Terminal-XP (same as P/N 6982 but designed for Windows XP based system)		P/N 6983
Poli-Identify-IPAQ	Utility for IPAQ Smartphone	P/N 6984
Software utility includes Poli-Terminal, and also allows collection and storage of spectroscopic data. It also enables local or networked review of gamma spectroscopy, and identification of isotopes.		
Poli-Identify-XP (same as P/N 6984 but designed for Windows XP based system)		P/N 6985

Library

The 1703GNB / MB, when coupled with Smart Identify software, provide users with quick access to several Library options. Managers may set up limited libraries, such as "MEDICAL ONLY", to address applications with limited variables and controlled environments. A user may be monitoring waste from hospitals and therefore only interested in a handful of ID options. Other programs may utilize the full "ANSI-Compliant" Library or the "IAEA Defined ITRAP" to address a range of First Responder applications. The library may be edited by the users, and updated spectroscopic data can be emailed from the factory for in-the-field upgrades. With a Windows CE platform, the Library Management tools for this system are easy to understand and utilize.

GPS mapping

SPRDs offer several options to address a range of server management requirements. In addition to spectroscopic collection and data storage, the SPRD family of radiation detectors offer unprecedented remote data access. The spectra collected, as well as alarm thresholds exceedances, can be reviewed in real time from a remote location. For smaller, non-critical networks, simple TCP-IP protocol and commercial mapping solutions are an ideal fit. • For applications supporting larger user numbers, BNC will provide your organization with application tools to develop your own server support and back-end data management. You may host the mapping and data review functions, or introduce a facility-specific Decisions Support System (DSS) module. With a full mapping solution and DSS, your state-of-the-art network offers unprecedented value.

- Leverage the lessons learned and protocols established
- Secure all real-time data / communication history in off-site storage
- Monitor in real time by your expert group
- Enable management set up remote alerts (geo-fence, rate of change, threshold, etc.)
- Deploy to any scale appropriate to your organization
- Integrate into other state and federal networks
- Google Earth support

Case Scenario 1: Discrimination of NORM in a public setting

An effective DSS system can be used to address notification of NORM radiation source such as radioactive isotopes detected in a recent medical patient at a large public event. DSS augments the operational protocols by providing expert advice to the users of the SPRDs by directing them through a series of simple questions tied into Decision-Tree logic on the PDA. The DSS system will analyze the spectroscopic data collected, and if DSS suspects that the offending source maybe Iodine, the DSS will guide the user through steps to confirm the strength and location of the source in the body. By coupling integrated artificial intelligence (AI) with the end user's response protocols, the disposition of the offending source can be efficient. The DSS system mitigates long delays in reachback, for commerce throughput scenarios.

Case Scenario 2: Vehicle Checkpoint

A security guard at a vehicle checkpoint will normally have little knowledge of radiation measurements. In the event of a high doserate detected in a vehicle passing through, the officer may be reluctant to move in to further analyze or transmit data. However, a networked system transmits the spectra files in real time to a remote location without user intervention. The integrated DSS software will enable the officer to maintain a safe distance from the source to ensure effective spectral collection without unnecessary hazardous exposure. Photographs appended to inspection report may be integrated into the DSS range of operational procedures.

Decision Support System (DSS)*

In a climate that supports deployment of a variety of radiation detection systems, from small handheld devices to large portals, the need for advanced software to assist in operational coordination has become apparent.

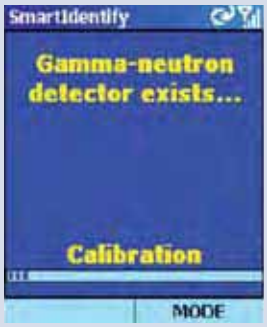
- The DSS system supports the operational needs of radiation detection device users through the integration of policies and decision-tree logic which enables end users to utilize a flowchart of information in addressing radiological issues.
- Instant access to historical scenarios can give real time guidance to smaller or less experienced teams who are responding to alarms for the first time.
- DSS scenario templates are easily migrated from lead departments to subordinate agencies.
- Over time, agencies can develop comprehensive DSS intelligence or leverage the DSS modules of related or parent organizations.

SPRD Training Program

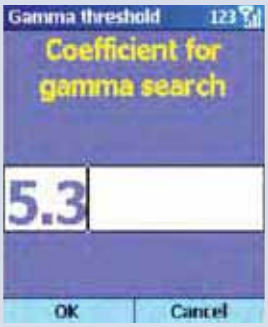
To address the complexity and benefits of using Spectra Gathering Personal Radiation Detectors over conventional PRDs, our team of health physicists and first responder trainers offer a variety of training options. From classroom exercises to onsite field testing, Berkeley Nucleonics is well suited to address your growing demands from handheld PRDs. To leverage your investment in spectroscopic pagers, be sure to enroll in our regional training programs near you.

** - The Model 1703MB/GNB and DSS software are products designed by PoliMaster Inc.*

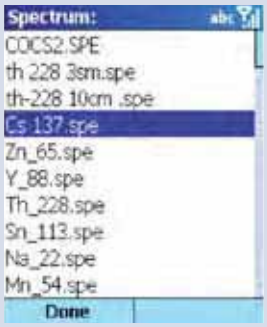
PDA SCREEN EXAMPLES



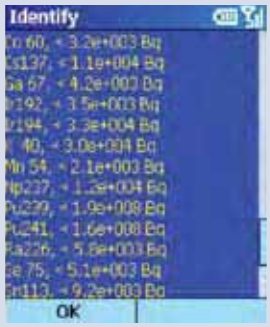
Source free calibration for easy transportation



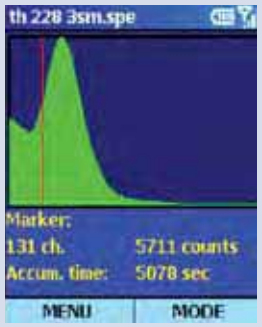
Easy monitoring of Gamma and/or Neutron counts from up to 300 feet away



Confirmation Database of Common Spectra Serves Non-Technical Personnel



Factory Defined and Custom Library Options



Spectroscopic Data and Reports (Thallium 228 shown above)

SPECIFICATIO N S

	PM1703MB	PM1703G N B
Detector:		
- gamma	CsI(Tl)	CsI(Tl)
- neutron	—	Li6I (Eu)
Dose rate:		
- gamma	1 – 9999 µR/h	1 – 9999 µR/h
	(0.01 – 99.99 µSv/h)	(0.01 – 99.99 µSv/h)
- neutron	—	0.01 – 999 s-1
Response time:	0.25 s	
Radionuclide identification using Bluetooth communication with external Pocket PC or Smartphone:	• Special nuclear materials (SNM) • Medical radionuclides • Naturally occurring radioactive materials • Industrial radionuclides	
Designed to comply with:	ITRAP/IAEA requirements, ANSI 42.32, 42.33(1),and 42.34 standard	
Alarm type:	visual, audio, vibration	
Data recording:	1000	
Battery life time:	up to 1000 hours	up to 800 hours
Operating temperature:	-22°F to 122°F (-30°C to 50°C)	

ETA Associates
119 Foster Street, Bldg #6 • Peabody, MA 01960
Tel: (978) 532-1330 • Fax: (978) 532 7325 • www.ETAassociates.com • eta@ETAassociates.com