

MATRIX MRDS is an area threat detection network that provides real-time detection, analysis and location of radiation threats/incidents within a large area.

# MATRIX MRDS™

Real-time Mobile Radiation Threat Detection Network



The Matrix MRDS (Mobile Radiation Detection System) is a state-of-the-art radiation threat detection network that provides real-time detection, analysis and location of radiation threats across a predetermined area. Incorporating an extremely robust wireless interconnect, Matrix MRDS ensures error-free data transmission whether used in fixed or mobile command centers.

The Matrix MRDS system has the capacity to integrate an unlimited number of sensors through expansion modules. The real-time threat assessment can be determined over a large area via wireless communications. The Matrix MRDS system also incorporates Natural Background Rejection (NBR) technology, greatly reducing innocent alarms by distinguishing between naturally occurring radiation sources and potential threats.

Thermo's full line of radiation probes offer an impenetrable radiation barrier which covers the complete spectra of artificial radiation sources that might be a threat to an area. Our detector network can be established in a fixed or mobile mode, which can be configured and reconfigured depending upon your detection objectives.



Highly sensitive probes provide fast detection of concealed radioactive sources. The Matrix MRDS is a highly-scalable, flexible platform which provides a clear path to additional centralized detection and analysis as it can be quickly upgraded to incorporate data from other sources.

**Benefits:**

- Centralization of radiation threat information from multiple sources
- Detects, analyzes and locates all possible radiation threats
- Highly configurable: fixed, mobile or venue-driven

**Features:**

- Rugged and secure wireless network
- Highly sensitive probes provide fast detection of hidden radioactive sources
- Greatly reduces innocent alarms with NBR technology
- Self-diagnostic capabilities
- Expandable platform over 40 detectors

**Applications:**

- Municipalities
- Chemical plants
- Nuclear plants
- Special events
- Critical facilities



Fully Integrated GPS Capabilities

The Matrix MRDS offers full flexibility with probes that can be either set in a fixed configuration (i.e.. bridge) or mobile (i.e.. mounted on a van) with no modification necessary. Additional types of detectors are being developed to detected chemical and explosive threats.

## MATRIX MRDS Capabilities and Specifications

### Advanced Imbedded Wireless Technology

Unaided signal distribution up to 1 mile wireless, aided signal unlimited area.

Data uplink capabilities via WiFi Technology

Wireless, direct, and hardened connectivity

- 2.4 GHz, secure, binary communication

Utilizes the methodology of spread spectrum transmission

- Allows signals to be spread over multiple frequencies for distribution over a larger set than would be used in conventional radio transmission. Resulting in reduced vulnerability to multi-path fading, interference and jamming.
- Methodology delivers a strong over-the-air protocol particularly well suited for challenging, sprawling or electrically noisy settings
- Error-free Data: 24-bit cyclic redundancy check (CRC) and automatic repeat-request (ARQ) features seamlessly detect errors and request retransmissions as needed, ensuring accurate network data

This technology has repeatedly proven to be superior to other communication protocols such as 802.11 in areas such as:

- Coverage
- Quality of signal
- Integrity of Data
- Less susceptible to interference

### Detailed Capabilities

Detects, locates, and monitors any type of artificial radiation sources

- Completely integrated radiation detection probes
  - Neutron Probe
  - NBR Probe
- Capable of detecting and monitoring radiation sources ranging from 20 KeV to 1500 KeV.
  - Includes Weapons Grade Plutonium, Enriched Uranium, Cesium, Cobalt 60 & 57 and highly shielded medical waste
- Incorporates Natural Background Rejection Technology to eliminate natural radiation sources from the treat matrix.

Real-time data

- Completely customizable alarms setting for all activities

Remote system diagnostics

All data available in ArcView 3.3/8.3.

### Detailed Features

Rugged design

- Complete vibration and shock tested

Multiple power options

- Battery power up to 3 hours
  - Incorporating Smart Battery Management Technology
- Vehicle AC power enabled

Detects, locates, and monitors any type of artificial radiation sources

Ease of maintenance

- Modular change out of all wireless communication components

Fully integrated GPS accurate up to 3 meters (9.8')

Self-diagnostic capabilities incorporated

©2007 Thermo Fisher Scientific Inc. All rights reserved. Kapton is a registered trademark of of E.I. du Pont de Nemours and Company. All other trademarks are the property of Thermo Fisher Scientific Inc. and its subsidiaries. Results may vary under different operating conditions. Specifications, terms and pricing are subject to change. Not all products are available in all countries. Please consult your local sales representatives for details. Literature Code LITMATRIX 0407

Worldwide

Frauenauracher Strasse 96 +49 (0) 9131 909-0  
D 91056 Erlangen, Germany +49 (0) 9131 909-205 fax

United Kingdom

Bath Road, Beenham, +44 (0) 118 971 2121  
Reading RG7 5PR United Kingdom +44 (0) 118 971 2835 fax

United States

27 Forge Parkway +1 (508) 520-2815  
Franklin, MA 02038 USA +1 (800) 274-4212 toll-free  
+1 (508) 428-3535 fax

[www.thermo.com/rmp](http://www.thermo.com/rmp)

**Thermo**  
SCIENTIFIC