



## **RadComm Systems: The Future of Radiation Detection for the Steel Industry.**

Innovative Products, Responsive Service and Dedicated Personnel.

### Introduction

Radcomm Systems are the leaders in the design, manufacture and service of highly sensitive radiation detection systems for a variety of applications in the steel industry. Flexibility, versatility and the ability to customize detection solutions for specific customer applications are what make Radcomm a unique supplier to the industry. RadComm has twenty years of proven field experience with 4,000 large-scale installations in over sixty countries worldwide.

At-a-glance, Radcomm is noted for:

- **Products**  
Proven products designed specifically for each application in a steel manufacturing facility
- **Service**  
Remote communication package, modular design components, easy to replace parts, fast service response, dedicated service personnel
- **People**  
Personnel who listen to customers and are dedicated to giving customers the effective solutions they need for the highest level of detection



Radcomm's success has been a function, in part, of its commitment to on-going research and development and the introduction of new technology and products. The RC-4000 vehicle monitoring system and the Cricket grapple mounted system are prime examples of Radcomm's technology in successful operation. In current development is a new magnet based system, which will provide the steel industry a vital defense in protecting their plants from radioactive contamination.

Over the past twenty years, Radcomm has been a dedicated supplier of leading edge detection technology to the scrap metal recycling, steel/metals and waste industries, resulting in consistent company growth and customer satisfaction. The success of Radcomm has been manifested in the investment of a new state-of-the-art facility for the purpose of providing world-class product development, sales and service, manufacturing and training. Leading edge technology, dedicated personnel and a new facility will catapult Radcomm into the future of radiation detection, illustrating its commitment to becoming the prime supplier of radiation detection technology to the steel industry.

## What Radcomm's advanced technology means to you

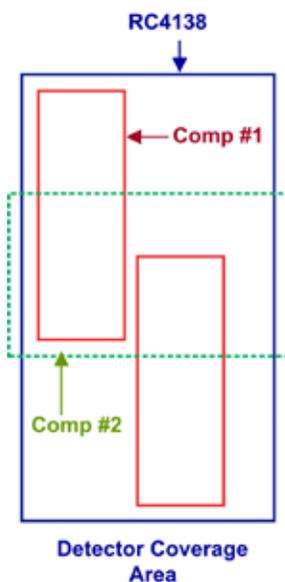
### Unique features, end user benefits

Unique features	User benefits
<ul style="list-style-type: none"> <li>• Better detector technology, coverage and application</li> </ul>	<p><b>&gt;&gt; 100% vehicle / load scan</b> Vehicle and loads are completely scanned – ensuring no missed sources</p>
<ul style="list-style-type: none"> <li>• Proven radiation detection capability               <ul style="list-style-type: none"> <li>— Highest sensitivity</li> <li>— Fewest false alarms</li> </ul> </li> </ul>	<p><b>&gt;&gt; Superior detection technology</b> Ensures the best protection, preventing contamination of plant, product and personnel.</p>

Unique features	User benefits
<ul style="list-style-type: none"> <li>Comprehensive product line, systems designed specifically for each application</li> </ul>	<p><b>&gt;&gt; Entire plant protection</b> One supplier, Radcomm, can provide full plant protection from entrance to off-gas</p>
<ul style="list-style-type: none"> <li>User friendly, multi-language software and operation</li> </ul>	<p><b>&gt;&gt; Easy to use, operator friendly</b> Easily gain acceptance of personnel with systems that are easy to operate with minimal training</p>
<ul style="list-style-type: none"> <li>Corporate supervisory remote system access and control</li> </ul>	<p><b>&gt;&gt; Ensure <u>your</u> alarm procedures are being followed</b> An easy to use system ensures alarms are being actioned and procedures followed</p>
<ul style="list-style-type: none"> <li>Reliable, year round operation, easily maintained</li> </ul>	<p><b>&gt;&gt; No interruptions in scrap flow</b></p>
<ul style="list-style-type: none"> <li>Responsive technical support and service</li> </ul>	<p><b>&gt;&gt; No downtime</b> Technical problems quickly and easily resolved</p>
<ul style="list-style-type: none"> <li>Satisfied customers</li> </ul>	<p><b>&gt;&gt; Proven technology</b> Over 4000 systems, including RC4000 and Cricket systems, in successful operation</p>
<ul style="list-style-type: none"> <li>New product development committed to on-going research and development</li> </ul>	<p><b>&gt;&gt; Automatic software up-grades</b> Ensures systems have the latest technology, automatic software up-dates available</p>
<ul style="list-style-type: none"> <li>Radcomm commitment to the long term: solely dedicated to the steel, scrap metal recycling and waste industries – currently building a new facility</li> </ul>	<p><b>&gt;&gt; Long-term support for your facility</b> Radcomm will be around for the long term to support your plant and facility.</p>



## Superior detector technology, coverage and applications



In order to provide reliable and rugged state-of-the-art detectors suitable for any hostile environment, Radcomm uses nothing but lab-quality components, such as premium grade PVT and components using low noise design technology.

Offering the largest detector coverage available today at 68” vertical and 31” wide, Radcomm’s RC4138 two detector truck system provides premium top to bottom coverage, without sacrificing dwell time. Similarly, the Cricket grapple mounted system comes in four detector sizes, engineered to fit most grapples used in the steel industry today. Each of Radcomm’s conveyor and charge bucket detector applications are designed and engineered to fit customer specific applications.

## Highest detection probability and fewest false alarms

Radcomm engineers have developed proprietary technology that not only tracks the pulse count rates from the PVT scintillator but applies a special characterization analysis on each pulse. The key benefit of this “characterization” is the knowledge that specific isotopes will produce predictable results.

Characterization is used to eliminate any major fluctuations caused by varying densities in loads of scrap metal, along with any atmospheric changes that might affect a reading. This technique is similar to what is utilized in gamma ray spectroscopy where a sodium iodide scintillator is used. Characterization is a signal processing technique that focuses on real-time system noise cancellation, correction of ambient background variations and maintaining extremely accurate

alarm threshold settings, all resulting in higher radiation detection sensitivity and the fewest false alarms.

The radiation detection process of characterization is a four-stage process:

- **Reduction of electronic “noise”**  
The front-end of Radcomm’s electronic circuitry has been kept to an absolute minimum thus significantly decreasing the introduction of electric noise to the system.
- **Every pulse is analyzed**  
The second stage of Radcomm’s electronics utilizes advanced signal discrimination with a zero lower level discriminator. This means every pulse is analyzed. These signals are cleared of electronic noise, random fluctuations associated with noise and shaped for the third stage.
- **Differentiation of random events from coincidental occurrences**  
Stage three then utilizes hardware and software pulse discrimination techniques that differentiate random events from coincidental occurrences in the incoming pulses from the scintillator. After this stage the pulses are processed with characterization hardware/software.
- **Background correction**  
In the final characterization stage the pulses from the scintillation material produced and the ambient background radiation are analyzed on a continuous basis to create a reference characterization. Background correction is performed automatically every sample period. This technique of background correction is extremely important especially when ambient background radiation level is high, when there are large atmospheric changes and when the contents of a shipping container vary in density. This allows the setting of extremely low alarm thresholds and minimizes the impact of false alarms.



The Radcomm systems ability to characterize the measured radiation levels, differentiate between various isotopes, virtually in real-time, all the while compensating for the fluctuations and changes in the ambient background radiation, mean the highest overall detection capability to the end user.

## Comprehensive product line

Systems designed specifically for each application

Of any manufacturer of radiation detection technology, Radcomm has the most comprehensive line of products. Radcomm can provide the steel industry with complete plant protection, from gate entrances, grapple mounted systems, conveyor and chargebucket operations to off-gas monitoring.

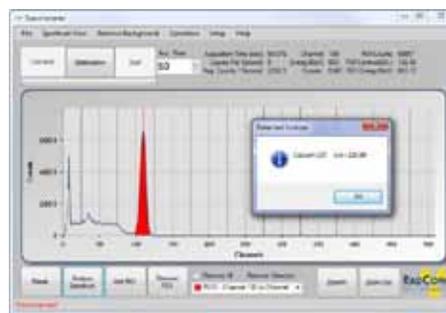
Radcomm's product offering is unique due to the following factors:

- **Application specific engineering**  
Systems are designed for each application, unlike other manufacturers that have used the same vehicle system technology in other applications
- **Grapple system technology that works**  
Radcomm has leading edge technology for grapple mounted systems  
– Cricket design is widely accepted as the industry standard

Type of system	Application
<b>Vehicle</b>	
	<ul style="list-style-type: none"> <li>· Small, merchant traffic</li> <li>· Medium, road vehicles</li> <li>· Large, truck and rail</li> <li>· High volume, truck and rail</li> </ul>
<b>Grapple</b>	
	<ul style="list-style-type: none"> <li>· Scrap handling</li> <li>· Various sizes to fit most grapples</li> <li>· Port/harbor / waterside unloading / loading</li> <li>· Rail car unloading / loading</li> <li>· Charge bucket loading</li> </ul>
<b>Conveyor</b>	
	<ul style="list-style-type: none"> <li>· Infeed, specific to each application</li> <li>· Downfeed, specific to each application</li> <li>· Ideal for shredders</li> </ul>

Type of system	Application
<b>Charge bucket</b>	
	<ul style="list-style-type: none"> <li>• “In-air”, specific to each application</li> <li>• Wireless capability</li> <li>• Last defense against radioactive sources</li> </ul>
<b>Front-end loader</b>	
	<ul style="list-style-type: none"> <li>• Specific to each application</li> <li>• Scrap handling</li> <li>• Wireless capability</li> </ul>
<b>Off-gas / dust</b>	
	<ul style="list-style-type: none"> <li>• Specific to each application</li> <li>• Minimize impact of source melting</li> <li>• Early warning system</li> </ul>
<b>Portable, handheld</b>	
	<ul style="list-style-type: none"> <li>• Simple, easy to use and operate</li> <li>• Rugged, durable design for steel applications</li> <li>• Ideal to locate a source</li> </ul>
<b>Magnet System</b>	
	<ul style="list-style-type: none"> <li>• Unparalleled durability</li> <li>• User friendly, easy to operate</li> <li>• Easy to install, maintenance friendly</li> </ul>

Type of system	Application
<b>Laboratory System</b>	
	<ul style="list-style-type: none"> <li>• Full scale Isotope analysis and activity calculation</li> <li>• Full scanning times between 1-5 minutes</li> <li>• Large diameter. well to accommodate different sample sizes</li> </ul>



## User friendly, multi-language software and operation

A radiation detection system is only as good as the people who operate them. That being said, Radcomm understands how important it is for radiation detection equipment to gain acceptance by the people who operate the system, at all levels. For this reason all Radcomm systems have clear, user-friendly descriptive color graphics and touch screen navigation with large buttons that can be easily operated with gloves on.

### Other system “ease-of-use” features include:

- Windows™ based interfaces that are multi-language user selectable, including Asian languages,
- Built in non-radioactive self-test capability that ensures the system is working properly at all times,
- RC4000 system has extensive data logging capability and the ability to add custom notes to specific alarm files.



## Corporate supervisory remote system access and control

Steel companies are putting more responsibility on the operators, supervisors and management to ensure that established alarm procedures are being followed and that ALL alarms are being actioned and reported according to company protocol.

To facilitate this kind of accountability and supervisory control, Radcomm has ensured all its systems are networkable, including wireless and telephone modem capability that enables remote system access and control from anywhere in the world.

The typical system includes full date logging capability; including, graphics and text, with large date logging file capability. This provides management and supervisory administrative control, trace ability and accountability of all system functions ..... *"Inspect what you Expect"*.



## Reliable, year round operation, easy maintenance and responsive technical support and service

Radcomm systems are designed specifically to be easy to install and maintain. This includes clear installation instructions and back-up, on-site training and where required, alarm procedure and protocol support. Radcomm design and parts are typically modular and facilitate easy change out and repair. All the systems have been manufactured with premium quality components, ruggedized hardware and in some cases heavy steel construction. The result is reliable, long lasting equipment.

When required, Radcomm is noted worldwide for its responsive technical support and service. Radcomm's service personnel are experienced in radiation detection within the workings of the

steel industry, anticipating typical problems and able to trouble-shoot unpredictable events. Typical service begins with a timely, responsive telephone call, network trouble-shooting and support, followed, when necessary by an on-site service call.

Radcomm also keeps a substantial inventory of spare parts, strategically inventoried around the world and readily available to ship, ensuring any unfortunate downtime is kept to an absolute minimum.

It should be noted that Radcomm can service other manufacturers radiation detection equipment and keeps a limited supply of spare parts.

**Most customers agree, Radcomm excels in SERVICE !**

## **Satisfied customers**

What makes Radcomm different is it maintains a small, friendly and personal company attitude

Radcomm has a reputation for satisfied customers. Radcomm has earned that reputation by being the company that is known for it's customization, problem solving capabilities and it's dedication and commitment to completing an installation to the one-hundred percent satisfaction of their customers. RadComm has over 4,000 large scale systems in successful operation in over 60 countries including, USA, Canada, Mexico, Germany, Spain, Sweden, Japan, China, Korea and South Africa.



RadComm initially established itself as a leader in scrap metal recycling industry



As technology evolved Radcomm then developed and implemented the grapple mounted system

## New product development

### Commitment to on-going research and development



Over the past fourteen years, Radcomm has continued to heavily invest in research and development, in particular, technologies that will enhance the future of radiation detection technology in the steel industry.

Over the past five years, Radcomm has substantially improved products such as the RC4000 with new algorithms, improved software, the creation of sophisticated and flexible networking capabilities, along with continually improving the quality of components and ease of maintenance.

During this time Radcomm has also introduced other new products, such as the Cricket Grapple mounted system, which has been proven in successful operation in over 400 installations worldwide. Due to the fact Cricket is an operator friendly system, using easy to use display graphics and is designed as a rugged, durable, weather-resistant instrument, Cricket is widely accepted as the “gold standard” of grapple mounted radiation detection systems.

Our new line of innovative products includes the Cricket Magnet system, a first for RadComm and is specifically designed to meet the needs of steel manufacturers who require better protection, particularly at the charge bucket.

RadComm’s laboratory spectrometer, the RADLAB, was developed to provide the highest degree of accuracy in measured samples for its specific radiological content.



## In conclusion

Radcomm is committed to the long term, the future of radiation detection for the steel industry.

In summary, Radcomm processes the core competencies, experience, technology, service and people to become the future of radiation detection technology for the steel industry. Flexibility, versatility and the ability to customize radiation detection solutions for specific customer applications are what make Radcomm a unique supplier to the industry.

Over the past twenty years, Radcomm has proven that its radiation detection systems work, with satisfied customers and successful installations worldwide. Leading edge technology, outstanding service and dedicated personnel along with a new state-of-the-art facility will catapult Radcomm into the future of radiation detection, illustrating it's commitment to becoming the prime supplier of radiation detection technology and solutions to the steel industry.