



*JS* **TECHWIN**





# RADIATION DETECTOR RADE-c



## 01 Product descriptions

It is a high performance portable radiation detector with the shortest decay time.

High performance portable radiation meter with very fast time is. This can be easily operated by the user in the field.

It has excellent compactness and economical. We are developing radiation measuring equipment, using scintillator, core parts of radiation detector and SiPM, a new alternative part for photo-multiplier tube.



## 02 Specifications

Model Name	RADE-c
Purpose	Radiation Contamination Detection
Operating Range	0.1 $\mu\text{Sv/h}$ ~ 9,999 $\mu\text{Sv/h}$
Type of Measurement Radiation	Beta, Gamma, X-ray, Muon
Energy Range	< 3 GeV
Size & Weight	54mm x 180mm x 23.2mm, 112g
Battery	3.7 V Rechargeable battery
Reaction Time	< 1 sec
Accuracy	0.1 $\mu\text{Sv/h}$ ( $\pm 10\%$ )
Sensor Type	Scintillator + SiPM
Display	Digital color LCD
Audio	Internal Buzzer
Warranty	1 year





# RADIATION DETECTOR RADE



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## 02 Specifications

Model Name	RADE
Purpose	Radiation Contamination Detection
Operating Range	0.1 $\mu\text{Sv/h}$ ~ 9,999 $\mu\text{Sv/h}$
Type of Measurement Radiation	Beta, Gamma, X-ray, Muon
Energy Range	< 3 GeV
Size & Weight	145.3mm x 68mm x 28.7mm, 242g
Battery	9V Battery x 2
Reaction Time	< 1 sec
Accuracy	0.1 $\mu\text{Sv/h}$ ( $\pm 10\%$ )
Sensor Type	Scintillator + SiPM
Display	Digital BW LCD
Audio	Internal Buzzer
Warranty	1 year





# RRPD-s

## 01 Real-time Radiation Personal Dosimeter

Ultra-compact radiation dosimeter that can be worn like a TLD. Using a scintillation sensor developed by our company, real-time monitoring is possible with less than 1 second detection time.

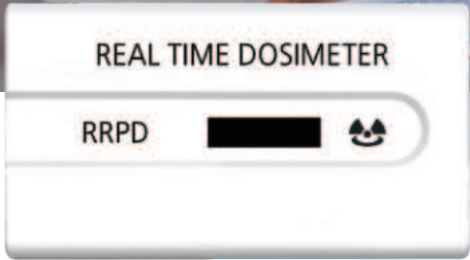
Traceability of personal radiation exposure can be managed through a server or mobile phone application.

Real-time radiation dosimeter can be used for personal exposure, management to prevent excessive exposure of medical personnel, maintenance personnel, and radiation-related workers.

## 02 Specifications

Model Name	RRPD-s	Reaction Time	< 1 sec
Purpose	Real-time monitoring and history of radiation exposure of doctors and radiation workers in hospitals such as operating rooms	Accuracy	0.1 µSv/h (±10%)
Operating Range	0.1 µSv/h ~ 9,999 µSv/h	Sensor Type	Scintillator + SiPM
Type of Measurement Radiation	Beta, Gamma, X-ray, Muon	Display	OLED Display (128 x 32)
Energy Range	< 3 GeV	Wireless connection	BLE(Bluetooth Low Energy)
Size&Weight	47.8 mm x 48.8 mm x 16.6 mm, 32 g	Charging specification	USB micro 5pin (5V)
Battery	Rechargeable lithium polymer battery 3.7V 300 mAh	Warranty period	1 year warranty





# RRPD-c

## 01 Real-time Radiation Personal Dosimeter

Ultra-compact radiation dosimeter that can be worn like a TLD. Using a scintillation sensor developed by our company, real-time monitoring is possible with less than 1 second detection time.

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Real-time radiation dosimeter can be used for personal exposure, management to prevent excessive exposure of medical personnel, maintenance personnel, and radiation-related workers.

## 02 Specifications

<b>Model Name</b>	RRPD-c	<b>Reaction Time</b>	< 1 sec
<b>Purpose</b>	Real-time monitoring and history of radiation exposure of doctors and radiation workers in hospitals such as operating rooms	<b>Accuracy</b>	0.1 $\mu$ Sv/h ( $\pm 10\%$ )
<b>Operating Range</b>	0.1 $\mu$ Sv/h ~ 9,999 $\mu$ Sv/h	<b>Sensor Type</b>	Scintillator + SiPM
<b>Type of Measurement Radiation</b>	Beta, Gamma, X-ray, Muon	<b>Display</b>	OLED Display (128 x 32)
<b>Energy Range</b>	< 3 GeV	<b>Wireless connection</b>	BLE(Bluetooth Low Energy)
<b>Size&amp;Weight</b>	100.5 mm x 54.4 mm x 18.9 mm, 58 g	<b>Charging specification</b>	USB micro 5pin (5V)
<b>Battery</b>	Rechargeable lithium polymer battery 3.7V 1,000 mAh	<b>Warranty period</b>	1 year warranty



# RRPD-p



## 01 Real-time Radiation Personal Dosimeter

Ultra-compact radiation dosimeter that can be worn like a TLD. Using a scintillation sensor developed by our company, real-time monitoring is possible with less than 1 second detection time.

Traceability of personal radiation exposure can be managed through a server or mobile phone application.

Real-time radiation dosimeter can be used for personal exposure, management to prevent excessive exposure of medical personnel, maintenance personnel, and radiation-related workers.

## 02 Specifications

Model Name	RRPD-p	Reaction Time	< 1 sec
Purpose	Real-time monitoring and history of radiation exposure of doctors and radiation workers in hospitals such as operating rooms	Accuracy	0.1 $\mu\text{Sv/h}$ ( $\pm 10\%$ )
Operating Range	0.1 $\mu\text{Sv/h}$ ~ 9,999 $\mu\text{Sv/h}$	Sensor Type	Scintillator + SiPM
Type of Measurement Radiation	Beta, Gamma, X-ray, Muon	Display	OLED Display (128 x 32)
Energy Range	< 3 GeV	Wireless connection	BLE(Bluetooth Low Energy)
Size&Weight	20 mm x 127.3 mm x 24.9 mm, 37 g	Charging specification	USB micro 5pin (5V)
Battery	Rechargeable lithium polymer battery 3.7V 500 mAh	Warranty period	1 year warranty





# RRPD-b



## 01 Real-time Radiation Personal Dosimeter

The Real-time Personal Radiation Dosimeter is used for the purpose of measuring the amount of radiation exposure by radiation workers in real time.

The real-time personal radiation dosimeter can measure quickly and accurately using microsecond scintillation sensors and photomultipliers, and can measure individual exposure in real time through a portable radiation monitor system through bluetooth wireless communication.

## 02 Specifications

Model Name	RRPD-b	Reaction Time	< 1 sec
Purpose	Real-time monitoring and history of radiation exposure of doctors and radiation workers in hospitals such as operating rooms	Accuracy	0.1 $\mu\text{Sv/h}$ ( $\pm 10\%$ )
Operating Range	0.1 $\mu\text{Sv/h}$ ~ 9,999 $\mu\text{Sv/h}$	Sensor Type	Scintillator + SiPM
Type of Measurement Radiation	Beta, Gamma, X-ray, Muon	Display	OLED Display (128 x 32)
Energy Range	< 3 GeV	Wireless connection	BLE(Bluetooth Low Energy)
Size&Weight	26mm x 57.2mm x 20.7mm, 28g	Charging specification	USB micro 5pin (5V)
Battery	Rechargeable lithium polymer battery 3.7V 180 mAh	Warranty period	1 year warranty



# PRMS



## 01 Product descriptions

The PRMS(Portable Radiation Monitoring System) helps radiation workers work safely by visualizing individual radiation exposure collected by a real-time radiation personal dosimeter.

The PRMS has a built-in UPS and is connected to the power adapter for use.

It can be connected with 1 to 10 personal dosimeters at the same time to display the readings.

## 02 Specifications

Model Name	PRMS	IO Port	USB x 2
CPU	Intel Atom x5-Z8350 1.44 GHz	Input power	12 V, 2 A
Cache memory	2 MB	OS	Windows 10
RAM	2 GB	Number of connected dosimeters	10 internal
Storage capacity	eMMC 32 GB	Size	189mm x 193.5mm x 152mm
Display	IIPS 7-inch touchscreen, 1,024 x 600 resolution	Weight	1,100 g
Graphic	Intel HD Graphics, 12 EUs	Warranty	1 year
UPS	14.4 V, 2,600 mA (2 Cell)		





# RMS-H



## 01 Product descriptions

The RMS-H (Radiation Monitoring System for Hospital) is radiation detection in operating rooms and radiation isotope-labeled radio pharmaceutical manufacturing rooms and monitoring of radiation exposure conditions throughout the hospital.

When radioactive materials are detected, guidance is given to safety / caution / danger according to the amount of radiation and the current status is transmitted to the monitoring system.

## 02 Specifications

Detector	Detector type	Plastic scintillator	Display	Screen size	26.16cm(10.3 inch)	
	Volume	5.67 L (324 mm x 239 mm x 733 mm)		Panel type	IPS-LCD	
	Efficiency	10,000 cps / (μSv/h, Cs-137), 5,000 cps / (μSv/h, Co-60) or more		Resolution	1,920 x 1,200 / 219ppi	
	Sensitivity	0.2 μSv/h BG condition, 0.1 μSv/h change detection ( < 1 s )		Network	Bluetooth v5.0	
	Operating range	40 keV ~ 3 MeV (Gamma)		Other specifications	I/O port	USB x 3
	Operating temperature	5°C ~ 55°C			Speaker	Stereo speaker
System specification	Alarm	Screen flickering, Beeping, Sending mail	Power/ Battery	Charging terminal	USB-C	
	CPU	Intel N4020		Usage time	Up to 9 hours	
	GPU	Intel UHD600	Size / Weight	Size	324 x 239 x 73.3 mm	
	RAM	4 GB DDR4		Weight	2,825 g	
	Built-in memory	64 GB + 256 GB	Alarm	Alarm type	Radiation detection	
		Operating system		Windows 10 S		



# Gamma Probe

## 01 Product descriptions

This product is a high performance gamma probe with an improved detection speed using an organic scintillation sensor with a response speed of  $\mu\text{sec}$  or less. Radiation doses measured after intrabody injection of radiopharmaceuticals can be used to map local lymph nodes, surgery of the thyroid gland, and to locate breast lesions that cannot be detected by touching.

## 02 Specifications

Model Name	Gamma Probe	Reaction Time	< 1 sec
Purpose	Cancer test equipment for local areas such as thyroid and breast	Accuracy	0.1 $\mu\text{Sv/h}$ ( $\pm 10\%$ )
Operating Range	0.1 $\mu\text{Sv/h}$ ~ 9,999 $\mu\text{Sv/h}$	Sensor Type	Scintillator + SiPM
Type of Measurement Radiation	Beta, Gamma, X-ray, Muon	Wireless Connectivity	BLE, UART profile
Energy Range	< 3 GeV	Antenna	Integrated PCB antenna
Size & Weight	266.7mm x 27.2mm (L x $\Phi$ ), 50g	Data Transmission	Count per sec
Battery	3,7 V Rechargeable	Frequency Band	2,4 GHz ISM
		Output Power	Programmable +4 to -20 dBm in 4 dB steps

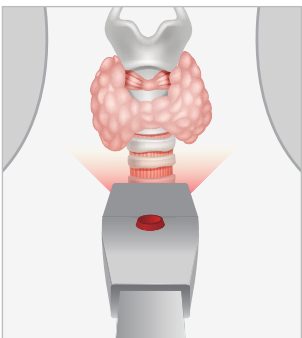


# Gamma Camera



## 01 Ultra-high sensitivity handheld gamma camera

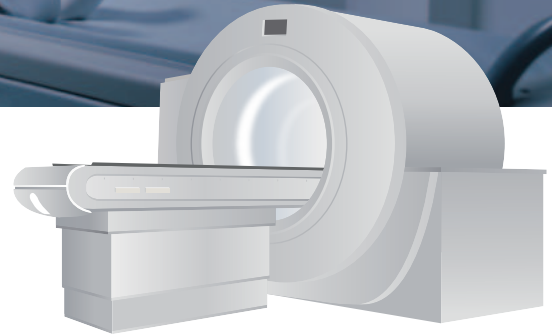
Gamma Camera is ultra-sensitive radionuclide detection imaging equipment that can be used in various fields of radiation industry, such as medical diagnostic equipment, non-destructive testing, and radioactive contamination monitoring. Ultra-sensitivity and lightweight handheld gamma cameras allow only a small amount of radiopharmaceuticals to be injected into the body to enable high-sensitivity diagnosis of thyroid cancer and breast cancer, improving the well-being of patients with related diseases.







# | PET



## 01 Positron emission tomography (PET : Positron Emission Tomography)

Positron emission tomography is medical imaging equipment detecting the disease in the early stage by making the precise measurement of biochemical metabolism change which occurs in the early stage of incurable disease such as cancer and cerebral infarction. We are developing a new type of medical imaging diagnostic equipment and detector using new technology. Since cost is reduced compared to existing products by using new technology, it is competitive in price and we locally develop and produce high-tech nuclear medical imaging diagnostic equipment with excellent performance as well.

For animal testing, clinical testing, brain science, And large-sized diagnostic, PET are also being developed.



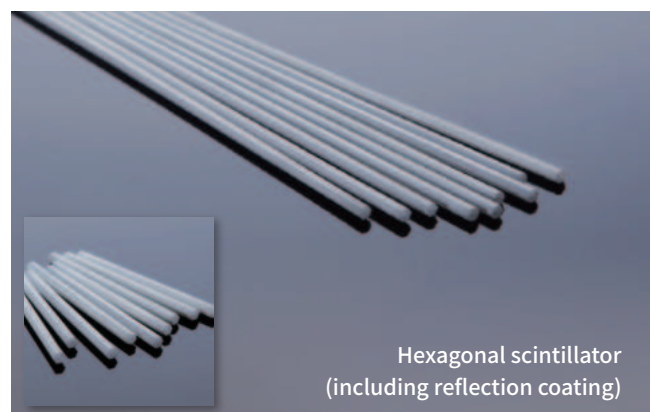
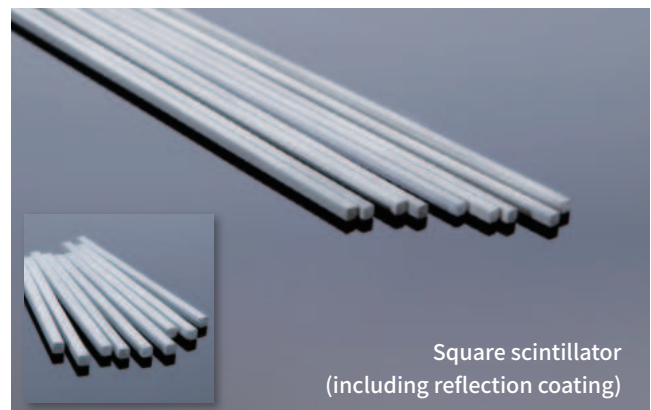
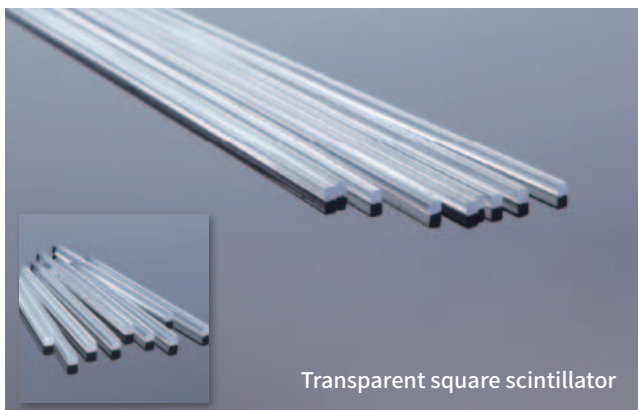
# SCINTILLATOR



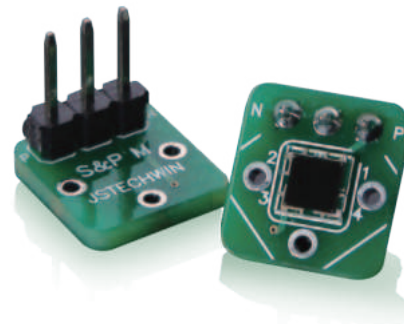
## 01 Plastic scintillator

It is a core part of a detector used to measure high-energy light (X-, Gamma-ray) using a photomultiplier and it is attached to an photomultiplier. This allows high-energy photons to react with the scintillator and turn them into bundles of photons in the visible region, which are measured by a photomultiplier. It exhibits a relatively high light output and relatively very fast signal with a 2-4 nanosecond decay time, and the ability to form almost any desired shape is the biggest advantage of plastic scintillators.

## 02 Scintillator formed in the various shapes



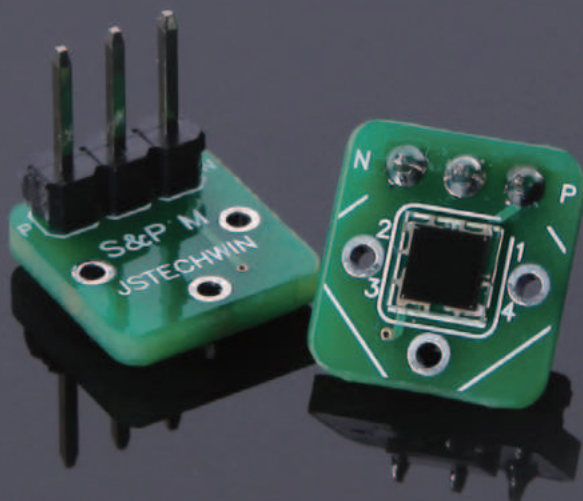
# SiPM



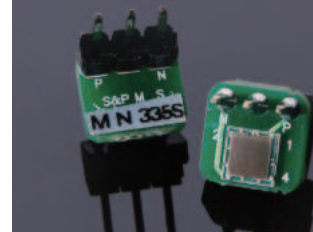
## 01 Silicon photomultiplier (SiPM : Silicon Photomultiplier)

It focuses on a wide range of applications using micro light detection. Due to the high cost, limited applicability, and complex engineering requirements of PMT (Photomultiplier tube), most of the next generation products are being converted to a new alternative component SiPM (Silicon Photomultiplier), which is a solid version, and we are developing and supplying it to meet consumer demand.

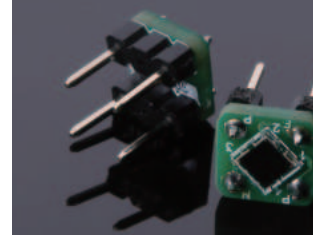
SiPM MN335S (10mmX11mm)



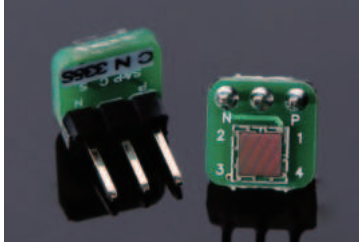
SiPM MN335S (8mmX8mm)



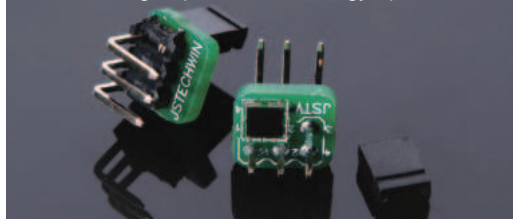
SiPM MD335 (8mmX8mm)



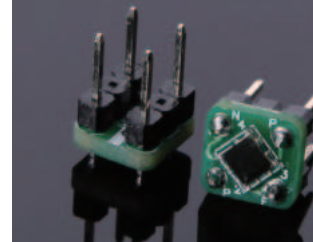
SiPM CN335S (8mmX8mm)



SiPM MN335A  
(8mmX9mm, Signal speed is selectable using jumper)



SiPM CD335 (8mmX8mm)



## 02 SiPM is applicable to

Medical imaging equipment	Flow cells measuring instrument	Fluorescence analyzer	LiDAR
Bio-photonix	Bio-imaging system	Danger and threat detector	Aerospace field



# PMT



## 01 Photomultiplier Tube

It is a highly sensitive photodetector that provides a current output proportional to the intensity of the incident light. The photomultiplier is used to measure the process which emits light directly or indirectly. Compared with other photo detectors, it has a large area light detection, high gain and the ability to detect single photons. It is very good. (The operation process of the PMT is shown in the picture on the top right.)



## 02 PMT is applicable to

Aerospace	Electronic microscope	Medical imaging	Radiation monitoring
Astronomy	High energy physics	Particle counting	Scintillation spectroscopy



# CONVEYOR MONITORING SYSTEM (RMS-F)



## 01 Product descriptions

RMS-F (Radiation Monitoring System for Food) can report accurately the radiation dose emitted from a test object as a numerical value through a sensor and photomultiplier tube when food enter the inspection table through a conveyor. RMS-F is a radiation measuring instrument that can be used in various fields such as agriculture, marine products, and food as it can measure large quantities of food quickly and conveniently.

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## 02 Specifications

Detectors	<ul style="list-style-type: none"><li>- Detector Type : Plastic scintillator</li><li>- Efficiency : 10,000 cps / (<math>\mu\text{Sv/h}</math>, Cs-137), 5,000 cps / (<math>\mu\text{Sv/h}</math>, Co-60) or more</li><li>- Sensitivity : 0.2 <math>\mu\text{Sv/h}</math> BG condition, 0.1 <math>\mu\text{Sv/h}</math> change detection ( &lt; 1 s )</li><li>- Operating range : 30 keV ~ 3 MeV</li><li>- Operating temperature : 5°C ~ 55°C</li></ul>
Alarm	<ul style="list-style-type: none"><li>- Alarm type : Radiation detection</li><li>- Alarm : Beeping, Conveyor stop</li></ul>
System specification	<ul style="list-style-type: none"><li>- Operating system : Windows 11 Home</li><li>- Storage : eMMC drive: 64 GB SSD drive: 128 GB</li><li>- RAM : 8GB RAM</li></ul>
Display	<ul style="list-style-type: none"><li>- Screen size : 10.5" PixelSense™</li><li>- Resolution : 1,920 x 1,280 (220 PPI)</li><li>- Graphics : Intel® UHD Graphics 615</li></ul>
Other specifications	<ul style="list-style-type: none"><li>- HEAD(mm) : 1,050x400</li><li>- CONVEYOR(mm) : 1,200x450</li><li>- BELT(mm) : 2,230x348</li><li>- BELT TYPE(mm) : 900207</li><li>- ELECTRIC POWER : AC220-230, 50/60Hz</li></ul>







# RADIATION MONITORING SYSTEM



## 01 Product descriptions

It is used to monitor the leakage of radioactive materials in nuclear power plants and major facilities using plastic scintillator radiation detector.

Industrial radiation monitoring system is a unique system that transmits signals to monitoring system when detecting radioactive materials using plastic scintillation and generates a warning siren.

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## 02 Specifications

<p>Detectors</p>	<ul style="list-style-type: none"> <li>- Detector Type : Plastic Scintillation</li> <li>- Volume : 7.62 L (50 cm x 30 cm x 5.08 cm)</li> <li>- Sensitivity : 0.2 <math>\mu\text{Sv/h}</math> BG condition, 0.1 <math>\mu\text{Sv/h}</math> change detection ( &lt; 1 s )</li> <li>- Efficiency : 100,000 cps / (<math>\mu\text{Sv/h}</math>, Cs-137), 50,000 cps / (<math>\mu\text{Sv/h}</math>, Co-60) or more</li> <li>- Operating Range : 40 keV ~ 3 MeV (Gamma)</li> <li>- Temperature Operating : -20°C ~ 60°C</li> </ul>
<p>Alarm Equipment</p>	<ul style="list-style-type: none"> <li>- Visual alarm : alarm light, electric sign board</li> <li>- Auditory alarm system : Siren</li> <li>- Alarm Types : Radiation, Sensor Failure, Instrument Failure</li> </ul>
<p>System Computer Specifications</p>	<ul style="list-style-type: none"> <li>- Intel© Atom CherryTrail Processor</li> <li>- 4 GB RAM</li> <li>- Intel HD Graphics</li> <li>- 32 GB eMMC</li> <li>- 250 GB SSD</li> <li>- 10/100 Mbps Network Card</li> <li>- WiFi 802.11 b/g/n</li> <li>- Windows 10</li> <li>- 24 inch Monitor</li> <li>- Operating Software</li> <li>- Wired / Wireless Network Support</li> <li>- Remote Monitoring System</li> </ul>





# RADIATION PORTAL MONITOR



## 01 Product descriptions

It is used for manufacturing large-scale radiation inspection equipment, such as radiation monitors for manufacturing port container and vehicle radiation monitors on entrance of major facilities and steel companies.

we have expanded and applied the material developed for nuclear imaging medical diagnostic equipment into the development of large-sized radiographic testing equipment by making it very compact.



## 02 Specifications

<p>Detectors</p>	<ul style="list-style-type: none"> <li>- Detector Type : Plastic Scintillation</li> <li>- Volume : 27.4 L (180 cm x 30 cm x 5.08 cm) x 2</li> <li>- Sensitivity : 0.2 <math>\mu</math>Sv/h BG condition, 0.1 Sv/h change detection (&lt; 1 s)</li> <li>- Efficiency : 100,000 cps / (<math>\mu</math>Sv/h, Cs-137), 50,000 cps / (<math>\mu</math>Sv/h, Co-60) or more</li> <li>- Operating Range : 40 keV ~ 3 MeV (Gamma)</li> <li>- Operating Temperature : -20°C ~ +60°C</li> <li>- Steel enclosure for background protection</li> </ul>
<p>Vehicle / Cargo Information Collection Equipment</p>	<ul style="list-style-type: none"> <li>- Automatic Number Plate Recognition System for Vehicle Identification (Night Time Detection Support)</li> <li>- Camera for cargo (Night Time Detection Support)</li> <li>- Vehicle Detection Sensor</li> <li>- Overspeed Sensor</li> </ul>
<p>Alarm Equipment</p>	<ul style="list-style-type: none"> <li>- Visual alarm : alarm light, electric sign board</li> <li>- Auditory alarm system : Siren, speaker</li> <li>- Broadcast system : Intercom</li> <li>- Alarm Types : Radiation, Overspeed, Sensor Failure, Instrument Failure</li> </ul>
<p>Safety Equipment</p>	<ul style="list-style-type: none"> <li>- Traffic light for vehicle control and deceleration indicator</li> <li>- Detector Guard</li> <li>- Automatic Barrier Bar</li> </ul>
<p>System Computer Specifications</p>	<ul style="list-style-type: none"> <li>- Intel© Core i7 Processor or better</li> <li>- 8 GB RAM</li> <li>- Geforce GT730 DDR3 2GB or better</li> <li>- 500 GB HDD or better</li> <li>- 10/100/1000 Mbps Network Card</li> <li>- Windows 10</li> <li>- 24 inch Monitor</li> <li>- Laser Printer</li> <li>- UPS (Uninterruptible Power Supply)</li> <li>- Operating Software</li> <li>- Wired / Wireless Network Support</li> <li>- Remote Monitoring System</li> </ul>



- 
- Radiation Detector
    - RADE-c
    - RADE
- 
- Real-time Radiation Personal Dosimeter
    - RRPD-s
    - RRPD-c
    - RRPD-p
    - RRPD-b
- 
- Portable Radiation Monitoring System (PRMS)
- 
- RMS-H
  - Gamma Probe
  - Gamma Camera
  - PET
- 
- SCINTILLATOR
    - SiPM
    - PMT
- 
- Conveyor monitoring system (RMS-F)
- 
- Radiation Monitoring System RMS
  - Radiation Portal Monitor RPM
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