JRi

日本RFID研究所
JAPAN RFID INSTITUTE

RFID

| Healthcare | Retail | Garment | Food |

| Library | Transportation | Military | Aviation |

Japan RFID Institute Co., Ltd

JRi

JAPAN RFID INSTITUTE
Just for ReFined IDeality

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Headquartered in Osaka Japan, Japan RFID Institute, has been focusing on RFID industry for over 20 years. During the time, we spared no effort to work closely with experts in this field, and now it is the right moment to unveil our products.

Our strength is the root-Healthcare and Biosciences, considered to be extremely demanding in product quality and precision. Therefore, we pursued higher accuracy and stability than the conventional RFID products. The credibility and trust from our clients are what we are proud of and what we are always pursuing.

Nowadays, Japan has been facing " the extreme aging society". We Japanese play a vital role in figuring out an effective solution to this issue, providing an exemplary model for other nations facing the same trend.

Just For Refined Ideality. Acting as a small giant in the world, Japan RFID Institute, is dedicated to exploring and providing more RFID products and solutions to potential applications, for a brighter and more accurate future globally.

JAPAN RFID INSTITUTE
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Rice Beads

Japanese Years Profound Workmanship Inheritance

Dedicated to creating industry's smallest and most reliable anti-metal tags

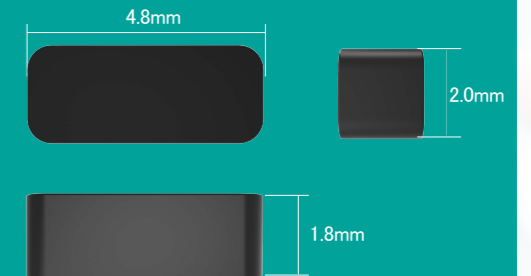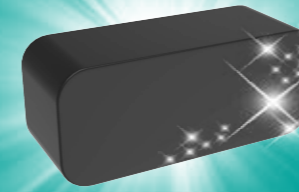Perfectly embedded or attached to small assets (e.g. surgical instruments)

UHF RFID tags (4.8x1.8x2.0mm)

Rice Beads — JAPAN RFID INSTITUTE

4.8mm

2.0mm

1.8mm

Introduction

Rice bead is the world's smallest UHF RFID tag, specially designed for single surgical instrument tracking in the healthcare market. Thanks to the superb processing technology inherited from Japan for many years, it realizes the ultra-high frequency near-field resonance circuit in the tiny size of rice bead by micro-carving technology.

It ensures the reading distance of this tiny tag is the same as the tags with 10 times larger size (e.g. standard RFID near-field tags Impinj J41, J51, Alien9613, etc.)

Size／Tolerance（mm）	4.8 × 1.8 × 2.0（±0.1）
Storage Temperature	−40℃ ~ +145℃
Installation of Tags	Glue or Embedded
Weight	0.25g
Reading Range	Max. 40mm @BoundTable

Features

1 World's smallest UHF RFID tags.

2 Withstands steam sterilization, enzyme wash, ultrasonic wash, etc.

3 The reading performance is independent of the material, size and glue location of the attached object.

Advantages

Item	Rice Beads	UHF RFID Metal Tag (can be used with metal or non-metallic objects)	UHF RFID Metal Tag (Must be attached to metal objects)
Size（mm）	4.8 × 1.8 × 2.0	100 times of rice bead's size	10 times of rice bead's size
Thickness（mm）	1.8	>5	1~5
Whether the reading performance is related to the size of the attachment？	No	No	Yes
Whether the reading performance is related to the glue location of the attachment？	No	No	Yes
Whether the reading performance is related to the glue material of the attachment？	No	No	Yes
Is it suitable for non-metallic materials？	Yes	Yes	No

Applications

Surgical Instruments Tracking

Small Assets Tracking

Tools Tracking

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BoundArea

Accurate Monitoring

Efficient Management

Accurate
The industry's most accurate UHF RFID reading area

Compact
Thin and light structure, perfectly attached to shelves

Tailor-made
Shape and size can be made based on customer's needs

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BoundArea

Monitoring inventory effectively and accurately anytime and anywhere;
Providing customers with efficient inventory management solutions.

Advantages

Very thin and light structure, perfectly embedded or attached in cabinets, see pic 1. **1**	World's most accurate UHF RFID tags reading area, no weak or blind zone. **2**	Fast and accurate multi-reading speed, 100% read, 200tags/second. **3**	Shape and size can be made based on customer's need, curved shape is also supported. **4**	No readings at the back side of BoundArea, see pic 2. **5**

Parameters

Model	BoundArea 4327	BoundArea 8627	BoundArea 5443	BoundArea 8654	/
Size(mm)	430×270×4	860×270×4	540×430×4	860×540×4	1720×1080×10
Effective reading range(mm)	430×270×50 (±5)	860×270×50 (±5)	540×430×50 (±5)	860×540×50 (±5)	/
Number of Port	1	2	2	4	/
Port type	SMA, MMCX or RG316 output.				
Tag	Pythagoras tags, Impinj J41, J51, Alien 9613, NT1017, 1018, 1022 and other UHF RFID near field tags.				
Temperature	−20～+70℃（working temperature）／−40～+90℃（storage temperature）				
Notice	BoundArea is not an antenna that radiates electromagnetic waves, but a transmission structure that limits electromagnetic waves to a certain range.				

BoundArea VS Traditional RFID technology

No misreading

BoundArea reading range is bound to 40–50mm, beyond this range, no mis-readings occurs, while traditional RFID technology cannot bound the reading range accurately, even if tags are taken a few meters away from reading range.

No misreadings occurs within the reading range, as there is no weak zone and blind zone in the BoundArea, but for traditional RFID technology, it is inevitable that some areas cannot be read even within the reading range. Some moves are needed for changing weak and blind zone, e.g. rotation and jitter moves.

Flexibility in shapes

Clear, shaped and smooth read area in the BoundArea, shapes can be made as a rectangular, circle or any shape clients need, while reading range for traditional RFID technology is irregular, hard to control and similar to a circle.

No backscatter

BoundArea backscattering is zero, no reading at the back side, but for traditionl RFID technology, there must be backscatter, and misreadings occur at the back side.

Applications

Healthcare：Drugs or Consumables Management

It is used for the management of drugs or consumables. By pasting RFID labels on drugs or consumables, it can realize the tracking of the supply process of drugs and consumables, manage the storage of drugs and consumables, and by scanning labels it can identify anti-counterfeiting of drugs and consumables.

Bio-Sciences：Medical Refrigerators or Freezers (for Management of Blood Bags, Reagent, Biospecimens, etc.)

For the management of blood bags, reagent, bio-samples, etc. RFID technology solved all sorts of problems of traditional barcodes, e.g. long query time, small memory, large information statistics, it guarantees data accuracy and fast query, the workload is greatly reduced.

Logistics: Intelligent Inventory Management

For the management of warehousing logistics, RFID technology can collect information of multiple goods without direct contact, greatly improve the accuracy of warehouse inventory, effectively solve the problem of warehouse shortage and help enterprises purchase and distribute operation, etc.

Garment: Production, Warehousing, Distribution and Sales Process.

RFID technology can be used in garment production, product processing, quality inspection, warehousing, logistics transportation, distribution and product sales to solve the anti-counter-feiting problem of clothing, greatly shorten the time of packaging, handling, inventory and statistics, thus reducing cargo damage, accelerating capital turnover and greatly improving storage management efficiency.

Books and Archives Management

RFID technology is used to realize the identification of item-level book or file on the shelf, which can complete the functions of library collection monitoring, inventory, book query and positioning, wrong shelf statistics, etc. RFID intelligent bookshelf system has the characteristics of fast detection speed and accurate positioning.

Food Industry

RFID has also been applied to food safety tracking management. In order to ensure that food safety, RFID tags are affixed to the outer packaging of food, including food testing information, food growth, production information, storage and transportation packaging information, consumers can trace back to the source of food and other information through electronic tag readers, and will be more assured when purchasing food.

Pythagoras Tag

Parameters

Item	Pythagoras Label	Pythagoras X Label
Size（mm）	13×10	13×10
Shape	Triangle	
User Memory（bits）	0	2048
EPC Memory（bits）	96	448
EAS electronic anti-theft system supported	NO	YES
Work temperature	−40℃～+80℃	
Write cycle	100,000 times	

Advantages

When the tags are overlapped, read performance is not affected.	Up to 2048 bits of memory can be encoded in 100 ms (PythagorasX tag only)	EAS supported, no back-end database required (PythagorasX tag only)

BoundTable

The state-of-art RFID technology

The industry's flattest magnetic field distribution

The industry's most uniform magnetic field distribution

The industry's most accurate distribution range

JAPAN RFID INSTITUTE

BoundTable

BoundTable is a table reader for identifying UHF RFID tags, realizing the industry's most accurate magnetic field distribution, perfectly placed on tables or shelves for real-time accurate capture of inventory. It is suitable for tool management, drug tracking, surgical instrument management, garment management, etc. Japan RFID institute is striving for excellence in RFID inventory traceability.

Background

The problem that puzzles the wide application of UHF RFID technology is that in order to read all the tags that should be read, the system always misreads some tags that are not in range and not supposed to be identified. The BoundTable solves this problem perfectly.

When used with UHF RFID near-field tags, the control accuracy of the reading range reaches 5mm, and the magnetic field distribution is extremely uniform, so that multi- reading is fast and accurate, without misreading issues. If it is used with UHF far-field tags, its reading range will be significantly increased, and there is still a clear boundary. Compared with UHF far-field antenna and UHF near-field antenna reading RFID far-field tags, it can be found that only BoundTable has no blind area and no strong area outside the read range.

Advantages

1 The flattest magnetic field distribution in the industry.The maximum identification distance of RFID near-field tags at all locations on the BoundTable（570×430 mm) ranges from 40 mm to 45 mm, with an upper and lower offset of less than 5 mm.

2 The most uniform magnetic field distribution in the industry. No blind area in the identification area on the BoundTable, and after reading for a period of time, it can be found that the RFID near-field tags in all identification areas are read almost the same number of times.

3 The industry's most accurate distribution range completely eliminates the reading of RFID near-field tags outside the BoundTable.

4 Zero backscattering. The tag will not be read even if it is attached to the back of the BoundTable.

5 Gesture refresh function. To refresh the total number of tags read on the BoundTable simply by waving your hand.

6 Counting display function.The total number of tags read is intuitive, no need to connect to the computer.

7 With rechargeable 18650 batteries, accessible and affordable, it can work continuously for a week after full charge.

Parameters	
Items	BoundTable
Size（mm）	602×491×65
Application Area（mm）	570x430x50(±5)
Communication Interface	Bluetooth, Wi-Fi, USB、LAN
Working temperature	5℃～40℃
Data Format	ISO 18000-6C protocol.
Memory	Can store and query 2 million data records

Highlights	
Items	Highlights
Blind spots	Completely eliminated
Missing reading（reading less）	Completely eliminated
To read a nearby tag outside the reading range	Completely eliminated
A strong area outside the read range or not	NO
Accuracy	99.98%

Smart RFID Cabinet

New Generation of RFID Technology

Comprehensive Improved Performance

Monitor (Optional)

Display Screen

IC Card Identification

Finger Vein Identification

Main Cabinet Door

Indicator Light

Divider Plate

Finger Vein Identification

Layer

Auxiliary Cabinet Door

Core Advantages

- No Cross-Reading
- No Missing Reading
- Multi-label Recognition
- No Unreadable Area

1 Capital Savings

According to research, each cabinet can save about $380,000 for the hospital every year and up to 360 working hours for medical staff.

2 Efficient Management

Powerful management function, background records can be checked. Expired items and out of stock reduced to 0.

3 Optimized Inventory

Early warning in the near validity period and interception beyond the validity period. Inventory was reduced by 65% and backlog was avoided.

Smart RFID Cabinet offers an innovative digital solution for managing valuable materials and consignment stock, with new generation of RFID technology provided by Japan RFID Institute.

Parameters	
Model	JRI-CB-C2
UHF Frequency	865MHz-928MHz
Air Protocol	ISO 18000-6C EPC Class1 Gen2
Inventory Tag Peak Velocity	＞700 pcs/sec
Multi-label Recognition	More than 300 UHF RFID Labels
Power Supply	AC 100-240V 50/60Hz
Power	≤200W
Net Size	790×540×1880 mm
Net Weight	125 KG

Desktop RFID Printer

JRI-P100R(300DPI)
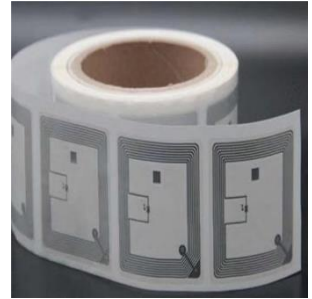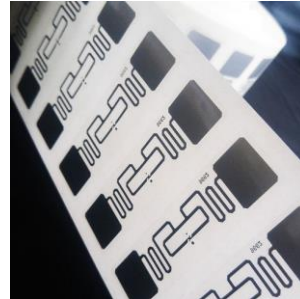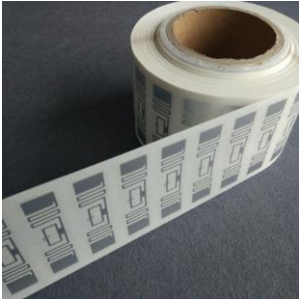
Features

Desktop RFID Printer JRI-P100R can track the read/write power of RFID tags in real time, providing maximum flexibility. According to the specific parameters of different chips, adjust the antenna strength and related parameters, automatically position the chip to achieve the best read and write position, and can print coded

short-pitch smart tags(16mm spacing).

UHF reader/writer support UHF EPC Gen2, 150/IEC 18000-63,optimized RFID processing to achieve the fastest tag reading and writing.

Application

The JRI-P100R will provide a full range of services to customers from retail, supply chain, freight,manufacturing, warehousing and health-care industries.

Specifications		
Model	JRI-P100R	
Paramter	Resolution	300DPI
	Print Method	Thermal Transfer/Direct Thermal
	Print Speed	4IPS(101.6mm/s)
	Print Width	106mm
	Print Length	Min:5mm;Max:4000mm
Media	Width	Min:25.4mm;Max:118 mm
	Label Roll Diameter	Max:215 mm
	Label Roll Axis	25.4 mm / 38.1 mm / 76.2mm
	Thickness	Min:0.06mm;Max:0.25mm
	Types	Continuous form, gap labels, black mark sensing, and punched hole; label length set by auto sensing or programming.Wristbands
Ribbon	Types	Volume
	Diameter	Max:64mm
	Axis	25.4mm
	Material	Wax, Wax/Resin, Resin
Sensor	Adjustable reflective sensor (full range，Adjustable transmissive sensor and reflective sensor)	
Word Processor	Support Windows Font	
Processor	32 Bit ARM CPU	
Memory	8MB Flash 16MB RAM	
Code Pages	CODEPAGE 437, 850, 851, 852, 855, 857, 860, 861, 862, 863, 865, 866, 869, 737 Unicode (UTF8, UTF16)	
Barcode	1-D Bar codes Code 39,Code 93,EAN 8/13(add on 2&5),UPC A/E (add on 2&5),I2 of 5&I2 of 5 with Shipping Bearer Bars,Codabar,Code 128(subset A,B,C),EAN 128,RPS 128,UCC 128,UCC/EAN-128 K-Mart,Random Weight,ITF 14,GS1 DataBar 2-D Bar codes PDF417,QR code,Micro PDF417 and Micro QR code	
Language	APL	
Fonts	Font Packs-Asian and other international font kits;7 resident expandable ZPL II bitmap fronts;one resident scalabel fonts;support windows fonts;Unicode compliant for multi-language,on-demand thermal printing	
Graphics	Supports User defined fonts and graphics including custom logos; ZPL II drawing commands for boxes and lines	
Options	External label roll holder for 250 mm O.D. label rolls,External label rewinder,RFID,Cutter,Bluetooth,WIFI	
Environment	Work Environment	Operation Temperature:5°C to 40°C(41°F to 104°F) Storage Temperature:-20°C to 50°C(-4°F to 122°F)
	Humidity	Operation Humidity:30-85%, RH,No Condensation Storage Humidity:10-90%, RH, No Condensation
Performance	Auto Switching	100/240VAC,50/60Hz
	Interfaces	Standard Configuration:USB2.0 Optional Configuration:RS-232(DB-9),10/100Mbps Ethernet,USB Host
	Control Panel	LED:Ready,Status;Key:Feed
	Agency Approvals	CCC
	Dimension/Weight	270 mm*170 mm*240 mm 3.7KG (excluding consumables)

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Orca 50 Air
Handheld Data Terminal

Refined Design
Enhanced Performance

Japan RFID Institute Co., Ltd

Orca 50 Air Handheld Data Terminal

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Advantages

High Performance Computing Platform

Powerful hardware configurations to ensure applications like massive data collection, 3D real-time display can be operated smoothly.

Industrial-Grade Components + Super Long Life Cycle

Ensure stable operation in harsh environment and provide guarantee for long term projects.

Ultra Long Operating Time

Pistol style hot swappable battery system makes backup battery more convenient to be restored.

High-End UHF RFID Engine

Equipped with self-developed module based on Impinj R2000 chip, offering the best performance and excellent multi-tag identification ability.

Outstanding Industrial Design

The appearance is compact, elegant and balanced, and each single detail has been well refined, making the product eye-catching and impressive.

Excellent Anti Drop Performance

IP64 protection level, can withstand the impact of 1.6m height falling to the concrete floor, and also effectively resist flying dust, splashing liquid, etc.

Items	Parameters		
Mechanical Parameters	Dimensions	50/50 Air	167×82×129mm
		Grip	111×38×47mm
System Characteristics	Operating System	Android 6.0	
	RAM+ROM	2G+32G / 4G+64G（Optional）	
	LCD Touch Screen	5.0 inches / 1280×720 / IPS / 180° view angle	
Wireless Communications	WIFI / Bluetooth 4.0 / 4G		
Data Collections	Barcode Type	1D / 2D Barcode（Optional）	
	Protocol	EPC Global UHF Class 1 Gen 2 / ISO 18000-6C / 6B	
	Frequency	902~928MHz / 865~868MHz（optional）	
	Peak Inventory Speed	＞500pcs/s	
	Read Distance	＞10m	

Scope of Application

Warehousing

Goods Inventory

Railway Patrol

Asset Inventory

Livestock Management

Logistics Express