

*COMPANY PROFILE*



## Profile of HK-RFID

Since its foundation in 2004, Hong Kong RFID has grown from an incubatee of Hong Kong Science and Technology Park's Incu-Tech Programme to today's leading RFID product designer and solution provider with headquarter in Hong Kong reaching out to clients all over the world. With pioneering wireless technology and production capability, we assist clients around the globe to improve operational efficiency by providing innovative and customized RFID solutions. Our product lines include passive and active tags and readers suitable for applying in various industries.



## Our Mission and Vision

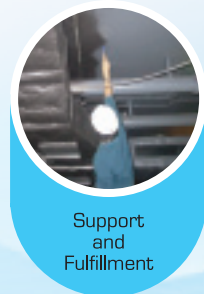
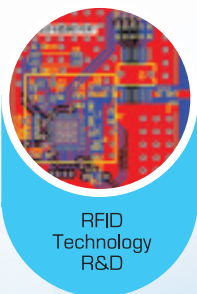
As a R&D company devoted in continuous improvement and innovation, HK-RFID is dedicated to designing hardware for all types of solutions leading to better efficiency, more convenient life styles and advanced technology. HK-RFID will continually develop and advance ourselves to stay in the cutting edge of RFID technology with our expertise and devotion.



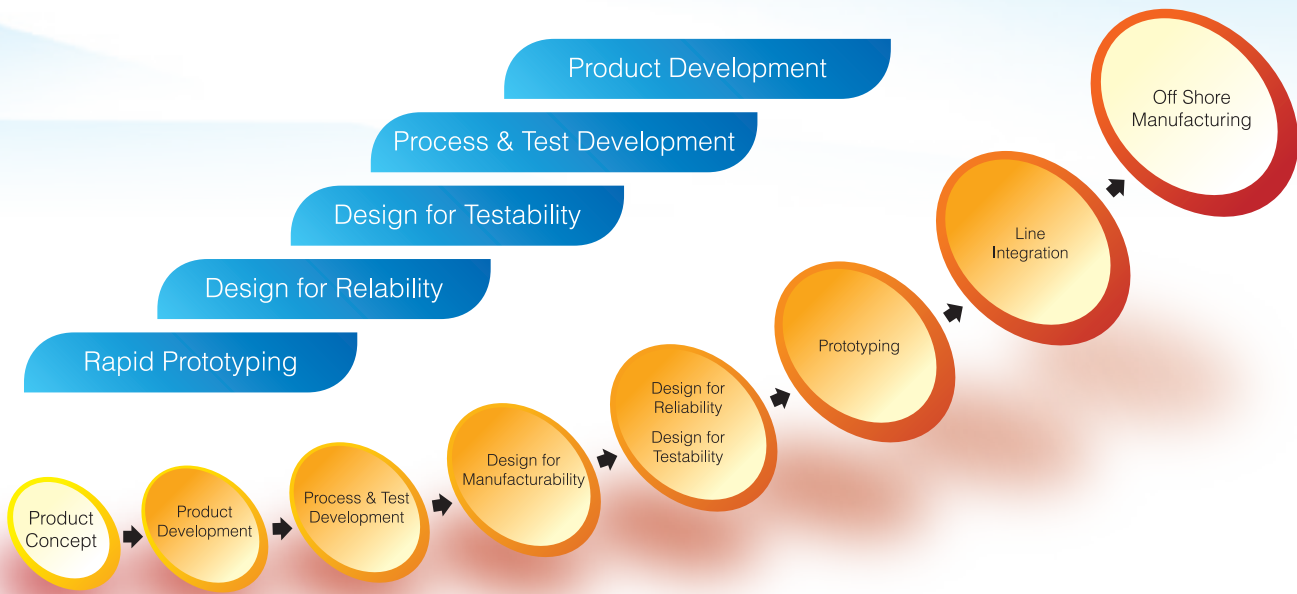
- To provide effective RFID solutions and professional consultancy to assist customers around the globe to realize their full potential and improve operational efficiency.
- To constantly develop and accelerate new technologies to meet or exceed customers' expectations in quality and value.
- To continually do R&D in order to advance existing RFID know-how & technology.
- To design RFID hardware, wireless system design.
- To develop product ideas, prototypes.
- To popularize RFID application in hope of improving the world's living standard.

## Our Service Scope

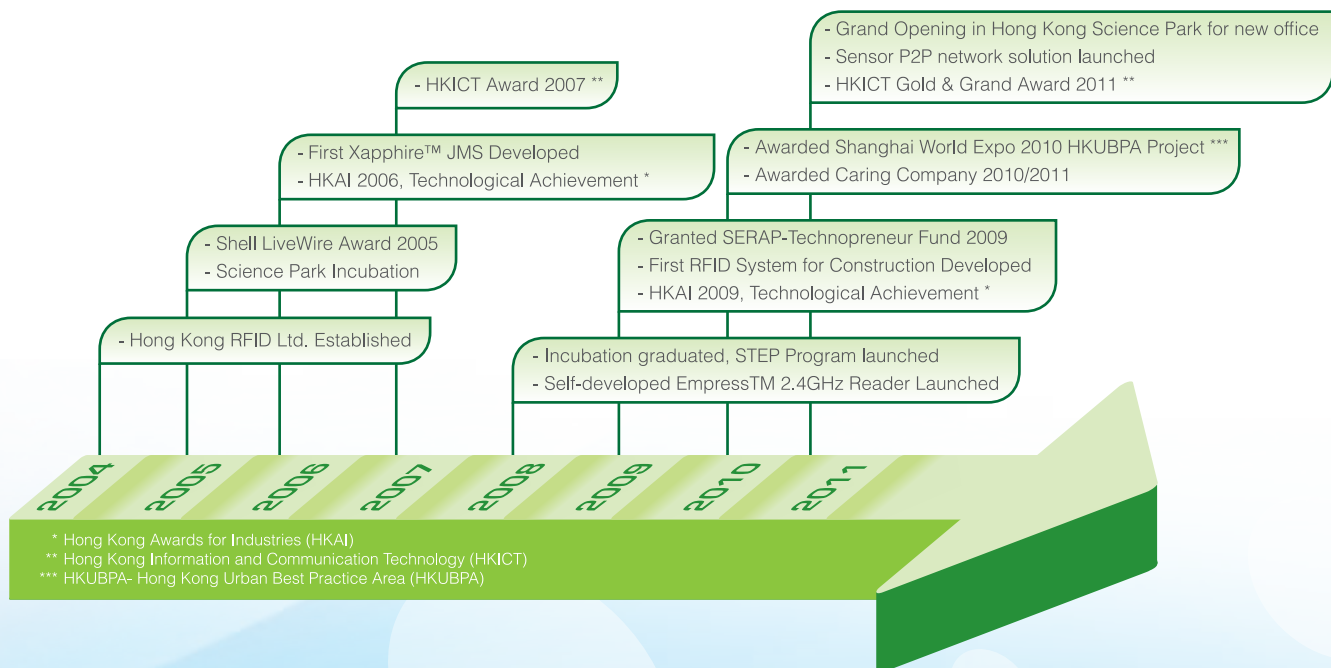
- RFID Equipment Design and Manufacturing
- New Product Development
- RFID Project Consultancy
- RFID Project Implementation
- On Site Testing and Installation Supervision for RFID System



## New Product Development



## Company Milestone



## Core Competencies

- Integrated RFID solution from design to manufacturing and after sales support for any scale RFID deployment
- Flexible business models and customized manufacturing
- Highly experienced and creative R&D personnel for special and challenging engineering tasks



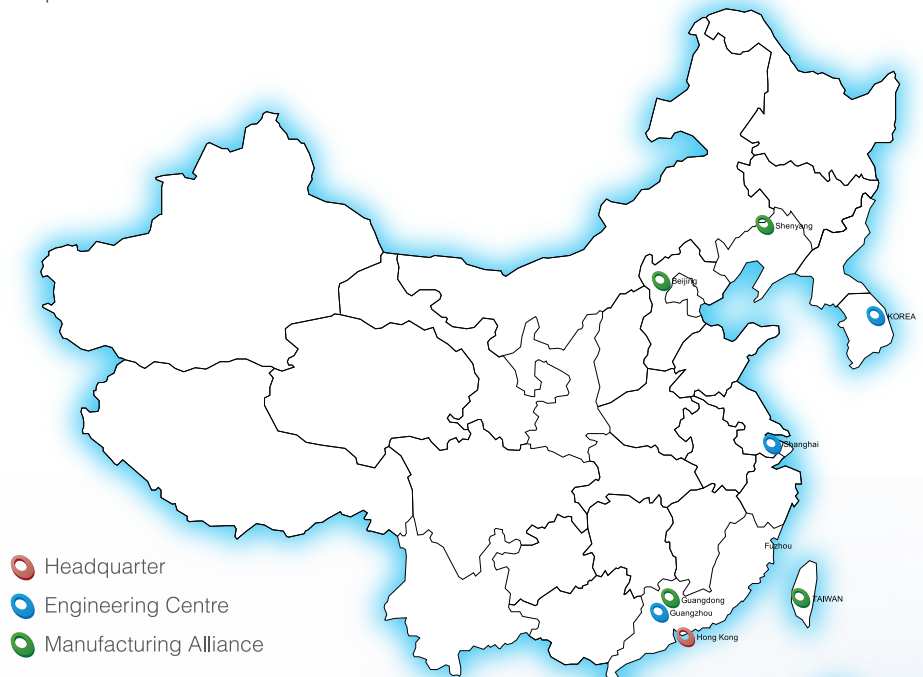
## Our Research and Development Capability

To pursue the goal of helping different industries improve operational efficiency and popularizing the application of RFID, we commit our resources in researching and developing new technologies. Resources in terms of time and money are spent on acquiring new tools and equipments as well as cultivating technical know-how of staff. Experienced staff with strong technical background from different Industries such as computing, electronic, engineering, manufacturing, etc. also contributes a lot to the R&D of the company. In our RF development process, all RF part of our products have been tested in radio frequency shielding rooms to ensure a high accuracy. On-site testing is also conducted to improve reliability and gather customer feedback. Since Hong Kong RFID's establishment, several strategic alliances have been formed with other research institutes and corporations to benefit from synergy and technology transfer.



## Our Production Capability

Our company has invested in high technology equipment to ensure that every product that we produce meets the highest standard of quality. Across China, we have production lines operated by well-trained personnel that together turn our innovative, customized designs into reality. The facility can be flexibly scaled to meet orders of any size while maintaining a high productivity. With a strict quality control and testing system, we are prepared to meet or exceed customers' requirements.



## Our Clients

- Commerce and Economic Development Bureau, the Government of HKSAR
- Hong Kong Mass Transit Railway Corporation (MTR Corp.)
- Hong Kong Convention and Exhibition Centre (HKCEC)
- Hong Kong International Terminals (HIT)
- Ocean Park Corporation (Hong Kong)
- Hong Kong and Shanghai Banking Corporation Limited (HSBC)
- New World First Bus Services Limited (NWFB)
- Chow Tai Fook Jewellery Co., Ltd
- Gammon Construction Limited
- Sino Land Company Limited

\* The above is our selective client list.



## Corporate Citizenship

As a pioneering developer of the RFID technology, one of our missions is to promote the application of RFID in different industries and introduce this technology to the general public. Since our foundation in 2004, we have been invited to hold a number of workshops and seminars organized by public organizations such as the Hong Kong Productivity Council, OCGIO, The China Hong Kong Permanent Way Society, Hong Kong Retail Technology Industry Association and Hong Kong Jewelry Manufacturers' Association to share our

expertise. We also aim to contribute to the welfare of local communities through educational programmes and voluntary work. Through collaborating with universities, our employees have participated in numerous student workshops, mentoring programmes and guest lectures to foster the growth of the technology sector. In the future, we will continue to place emphasis on sustainable development to the benefit of our business and its stakeholders.



## What is RFID?

RFID, radio frequency identification, is a technology which uses radio frequency transmission to identify objects automatically. A RFID reader can sense objects that have RFID tags attached to them, as well as read and rewrite the data stored in the tags. RFID technology represents a new approach to exchange data in a wireless manner. With a tag and a reader, not only could one determine the identity of an item, one could also trace its location and obtain detailed information about it.



## RFID vs Barcode

Advantages of **RFID** over Bar Code:

- Out-of-sight data can be read
- Difficult to imitate
- Works on round surface
- More automated, less human intervention
- Simultaneous multiple-object identification
- Larger storage capacity
- Reusable and rewritable
- Higher durability

**RFID** tags can be attached to almost anything:

- Jewelries, watches and other luxuries
- Company assets and documents
- Apparel and luggage
- Vehicles and equipment
- People, livestock and pets
- Cartons and pallets



## Application of RFID

- Inventory and warehouse management
- Supply chain management
- Asset management e.g. luxury goods, documents,
- Pet and livestock control
- Anti-counterfeits
- Security access control
- Medical data gathering to keep track of the patient's record
- Monitoring the physical environment
- Exhibition and event management
- Customer relationship management
- Temperature Monitoring
- Vehicle and equipment management
- Maintenance Service
- Transportation system

## Benefits of RFID application

HK-RFID has explored the usage of RFID in various industries. Our customized products and devices offer users from any field the chance to experience the benefits brought by this cutting-edge technology.

- Improve operational efficiency
- Reduce labor cost in asset management
- Enhance the quality of information flow
- Improve customer experience
- Heighten security and safety level
- Convenience in tracking goods, people and animals
- Increase in accuracy and reliability



## Jewellery Management System

Stocking taking used to take jewellery wholesalers and retailers days to complete before they go to a tradeshow, as they needed to check each item one by one. Now, with RFID technology, the process can be shortened to less than an hour. Small RFID tags as tiny as paper clips can be reused, and can show the product code, picture, price and description of a jewel after one scan from the reader. Data of a tray of jewellery can be processed each time, saving more than 90% of the original labor cost.

Benefits of **RFID** in Jewellery Management:

- Improve accuracy and reduce human errors
- Increase operational efficiency, especially in stocktaking
- Greatly reduce labor cost and time
- Guarantee traceability across the supply chain



# Construction Project Management



With the help of passive RFID tags, information such as product ID, sources and application can be stored in building materials, facilitating individual quality inspection. As the tags are very durable, they can withstand the rough transportation process and help identify the source of scrap. RFID technology continues to bring in benefits even after building processes have been completed. Data stored in tags can still be retrieved years after their implantation, which allows maintenance staff to find out the product type and source easily.

Active RFID tags can prevent theft and loss of equipment. After equipments or vehicles are tagged with their ID stored in a reader, their location can be shown and a warning signal will be given out if they leave the reading range. The system can also act as access control for special equipment by allowing only workers with access right to check them out for use. As for people management, active RFID technology can track the location of workers and alert them as well as the security staff once they enter a hazardous zone.

## RFID Applications in Construction Industry Construction Safety

### PERSONAL WARNING SYSTEM

#### RFID Applications:

- Personal Warning System
- Real-time tracking and locating System
- Access Control System
- Human Resource Management
- Long Range Identification

#### Special Features of RFID Active Tag:

- Low Infrastructure cost
- Read 30m to 50m distance
- Outdoor-use
- Auto judging / alarm functions



Benefits that RFID brings to construction:

- Improve logistics and supply chain management
- Shorten construction time and reordering cycle
- Facilitate inspection and maintenance
- Reduce the cost of human errors
- Prevent theft and loss of equipment
- Enhance safety in construction sites



Main Contractor  
Pre-Requisite Process

Manufacturer  
Plant Process

Site Manager  
Site Process



## Customer Relationship Management

Active RFID technology can bring customer relationship management to a whole new level in any industry. With a sensor installed at the entrance, a customer's profile, preference, purchase history and the service booked can be retrieved to let staffs provide personalized services the moment he/she arrives. As booked products or services can be prepared immediately, customers' waiting time as well as the sales cycle can be shortened. In addition, up-selling can be carried out with a greater chance of success. The active RFID system can also act as access control in VIP areas. All this can be done without the need of taking out the tag because it functions perfectly even in a handbag. With the RFID system installed, customers will definitely be impressed by the prestigious services they experience.



Benefits that **RFID** technology brings to hotels and retailers:



- Provide immediate personalized services
- Enhance customers' experience
- Offer convenient access control
  - Increase in revenue through up-selling
  - Upgrade brand image and reputation

## Access Control

A RFID system can be used to restrict people and vehicle access in luxury properties with sensors installed at entry points. It does not only heighten security control, but also enhances residents' experience. After their information is stored in active tags, doors and gates will open automatically when residents carrying the tags approach. Without moving a finger, an elevator can be arranged to go to the designated floor. Residents need not take their hands off the wheel when they drive into the estate or car park because the tags can be sensed even through vehicles. With a battery life of over a year, the reading range of the tags is up to 100 meters. Sensors will give out alerts as reminders to change the battery when it runs low.



Benefits of **RFID** application in access control and management:

- Provide unmanned control access
- Heighten security control
- Facilitate staff management
- Improve efficiency in stocktaking and inventory management



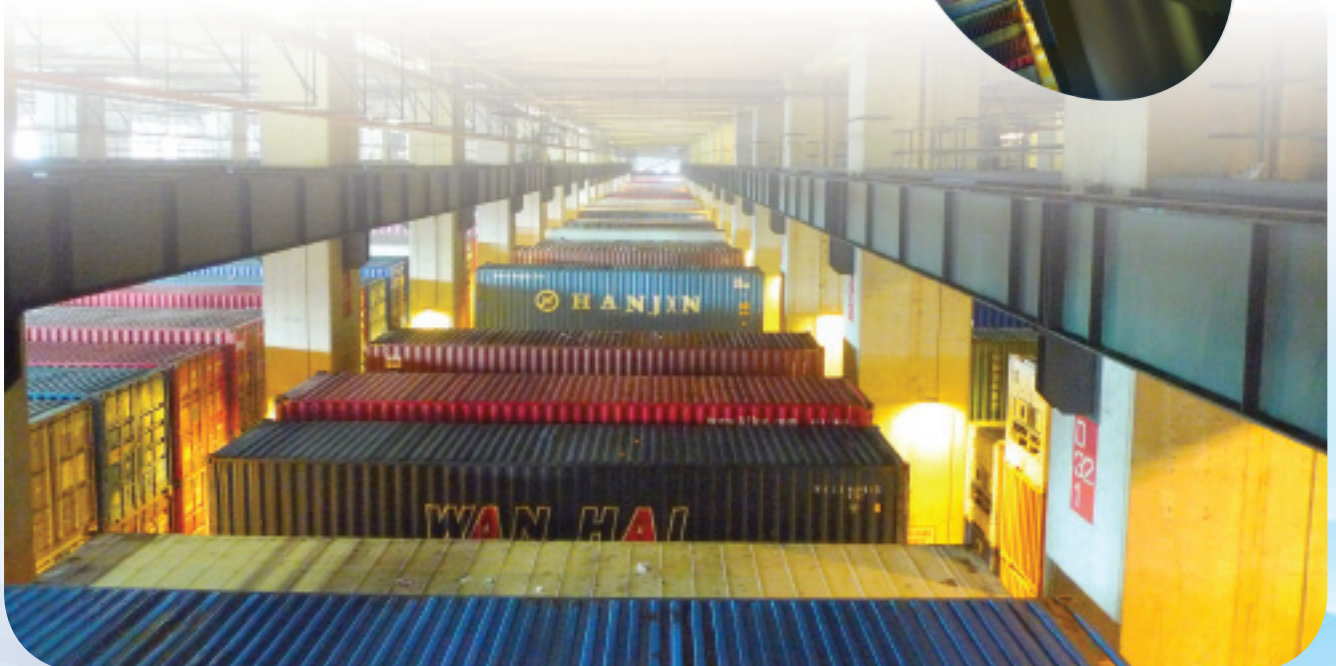
## Asset Tracking



An active RFID system can help you track and locate almost anything you can imagine in anywhere with a handheld or wireless reader. Take an office as an example, RFID tags can be attached to sensitive documents and high-value mobile IT equipment. When an employee takes away one of these tagged items, the installed reader would be able to read the tag attached and send the time, location and item code to a software system for record. If this is combined with the use of an active RFID access card for each staff, data of staffs and items can be matched to identify who has used which items plus the time and place of use.

### Benefits of asset tracking:

- Keep track of confidential, valuable or mission critical items automatically
- Provides a complete history of movement and utilization of assets
- Prevent loss, theft and unauthorized use of assets
- Eliminate the cost of search and replacement



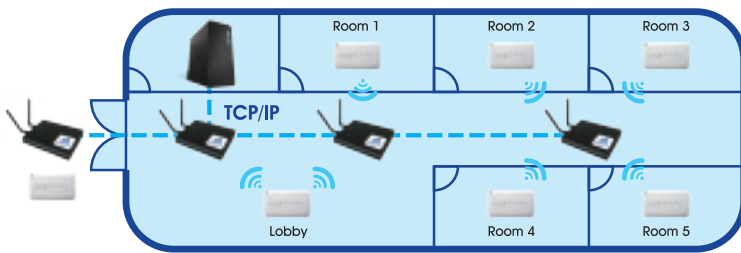
## Wireless Sensor Network

A wireless sensor network consists of a mobile reader which can transfer and collect information, and an unlimited number of sensor tags that can measure the temperature, motion, illumination etc. depending on the size and cost. The reader has a high anti-collision ability and storage capacity. Data collected can then be transferred to a PC for further processing through Wi-Fi connection. The flow of information is not affected by nodes failure because a peer-to-peer network can be set up. Basically, it is easy to install this system anywhere.

### Applications:

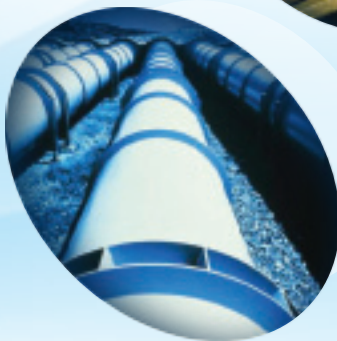
- Network home appliances, intelligent home/ office system
- Environmental data monitoring for building
- Corrosion monitoring

### Application Diagram

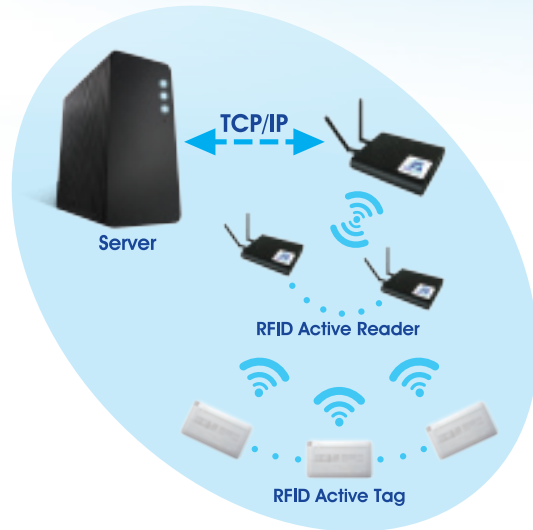


### Benefits:

- Ability to withstand harsh environmental conditions
- Ability to cope with node failures
- Coping with mobility of nodes
- Dynamic network topology
- Unmanned operation



### Wireless Reader 1-N System



### Wireless Reader N-N System

