We believe that VANCH will bring you more perfect service and support.

The whole world has been quickly entering the mobile Internet, Internet of Things. It is increasingly profound changes in our industry and life. Every day, thousands of people around the world use VANCH’s products, and in the best way to improve their work and living space, their satisfaction is our greatest success.

As a professional wireless radio frequency product and solution provider, Shenzhen Vanch Intelligent is committed to promoting the application of RFID technology in various industries and help client to improve their efficiency, management, intelligent and informatization by using leading technologies, products and rich experience in the field of RFID. Applications in warehousing management, personnel management, asset management, industrial automation, intelligent transportation, smart cities, logistics, retail, product traceability, etc. The company has obtained more than 40 patents and was awarded as a high-tech enterprise and software development and design enterprise. The products have passed CE and FCC certification and are exported to more than 60 countries and regions around the world.

CORPORATE MISSION
Promote the application popularization of wireless identification technology, and change people’s work and life with VANCH products.

CORPORATE VISION
Become the world’s leading RFID products and solution provider; Become a happy enterprise.

CORPORATE CORE VALUES

Enterprise
Constantly strive to become stronger, following the evolution of heaven and earth, strive ourselves improved, strong and firm, working hard and never stop.

Responsibility
Know obtaining and returning, when team and individual obtain benefit, we should undertake returning to society.

Dream
To be a dream company, we work with our dream. We achieve dreams of the team and individuals.

Responsibility
Knowing how to get and return, organizations and individuals also bear the responsibility they deserve.

QUALITY POLICY

Inspiring customer by innovative thinking
We insist on technical innovation, ensure to invest more fund on research and development, leading the industry trend by innovation.

Reassuring customer by professional manufacturing
We insist on professional manufacturing, being strict on quality system, to obtain customer's trust by quality.

Relieving customer by high grade service
We insist on customer priority, providing high quality service and working hard for 100% satisfaction.

Attracting customer by good reputation
We insist on reputation first, keeping business credibility and making "VANCH Intelligent" to be an excellent brand.
In 2010, VANCH obtained the utility model patent certificate and CE EU certification for Bluetooth communication UHF handset, UHF multi-antenna splitter, UHF portable mobile reader and other products.

In June 2010, VANCH was rated as "Deputy President Unit" by Shenzhen RFID Industry Standards Alliance.

In December 2010, VANCH'S fixed reader/writer VF-747 received a utility model certificate and passed the ISO9001:2008 quality management system certification. In 2010, VANCH was selected as the "Most Influential Fixed Reader Innovation Product Award" by China Internet of Things Industry Application Alliance.

In 2011,
- VANCH introduced the first entrepreneurial business model in July 2011 and established Shenzhen VANCH IOT Intelligent Technology Co., Ltd.
- In May 2011, "VANCH RFID fixed reader" was awarded the title of Guangdong Provincial Contract-honoring and Credit-Reliable Enterprise.
- In June 2011, "VANCH RFID fixed reader" was selected as the "Most Influential Fixed Reader Innovation Product Award" by China Internet of Things Industry Application Alliance.

In 2012,
- Internet of Things Technology Application Association VANCH joined Shandong Internet of Things Association in April 2013.
- In May 2013, VANCH won the bid for the RFID management project for special operations vehicles in Saudi Arabia, and supplied more than 2000 sets of readers.

In 2013,
- Internet of Things Technology Application Association VANCH joined Shandong Internet of Things Association in April 2013.
- In May 2013, VANCH won the bid for the RFID management project for special operations vehicles in Saudi Arabia, and supplied more than 2000 sets of readers.

In 2014,
- In January 2014, VANCH joined the member department of the China Department Store Business Association Unmanned Branch.

In 2015,
- In April 2015, Shenzhen VANCH Security Technology Co., Ltd. was established.
- In May 2015, "VANCH RFID fixed reader" was awarded the "Intellectual Star" RFID Innovation Product Award.
- In 2015, VANCH won the "2015 IOT Star RFID Reader Equipment Enterprise Award".

In 2016,
- In April 2016, Shenzhen VANCH Security Technology Co., Ltd. was established.
- In May 2016, "VANCH RFID Jewelry Counting Machine" won the "Intellectual Star" RFID Innovation Product Award.
- In 2016, VANCH's Linux platform X+ series UHF RFID reader product line was launched.

In 2017,
- In January 2017, VANCH became a member of the Industrial Internet Industry Alliance formed by the China Information and Communication Research Institute.
- In June 2017, VANCH was awarded the title of Guangdong Provincial Contract-honoring and Credit-Reliable Enterprise.
- In July 2017, VANCH became a member of PBEICO (International Printed Electronics and Intelligent Packaging Industry Association).
- In August 2017, Shenzhen VANCH Intelligent Technology Co., Ltd. was awarded the title of "High-tech Enterprise".
- In October 2017, VANCH's UHF RFID fixed reader was selected as the "Most Influential Fixed Reader Innovation Product Award" by China Internet of Things Industry Application Alliance.

In 2018,
- In January 2018, VANCH joined the member department of the China Department Store Business Association Unmanned Branch.
- In June 2018, Shenzhen VANCIO Information Technology Development Partnership was established.
- In July 2018, Shenzhen VANCIO Information Technology Development Partnership was established.
- In October 2018, VANCH's Android UHF RFID reader was named "OTIE2018 Gold Award Innovative Product".
Quality Advantages

We are the earliest enterprise involved in professional UHF RFID products’ design and development.

Our R&D Management Team has more than 10 years’ experience in RFID market.

We are positioned to do a world-class company for Internet of things.

● Our company obtains ISO 9001 enterprise standard certification, so quality is assurance.

● Our products have the certification of CE and FCC, in line with export requirements.

● Our components of products use international brand suppliers to ensure quality.

● Our products undergo a rigorous high and low temperature testing before they leave factory.

Industry Applications

● RFID based City intelligent transportation management system;

● RFID based retail, garment/-clothes management system;

● RFID based warehouse/asset management system;

● RFID based dangerous Goods tracking system;

● RFID based food Traceability and anti-fake management system;

● RFID based Factory production line management system;

● RFID based library management system;

Product Advantages

● Rich products serial, suitable for different application environment.

● Cost-effective Product, high, medium and low grade of product design adapt to different needs.

● Product appearance patent design is suitable for industrial environment.

● Rich Communication interfaces and input and output interface are convenient for system integration.

● Product design is compatible with international standards, adopting international advanced technology.

Technical Advantages

● Our RFID Products have our independent Intellectual property rights, with more than 40 patent certificates.

● Our RFID Reader hardware adopt 64-bit ARM processor, RF components use world well-known brand chips to keep fast and stable read and write performance.

● Compatible with multi-protocol tag reading, detailed designs of demo apps functions commissioning.

● Multi-languages SDK, which is good for system integration development.

Service Advantage

● Guarantee customer’s rights, please dial customer’s complaints hotline 13510003561;

● 7 days × 24 hours after-sales technical service hotline, contact 0755-82426775-607.

● Problems can’t be solved by remote-control support, we committed to:

  Technical member visit the project site within 12 hours in Guangdong province;

  And 48 hours arrived in other provinces.

  Provide guideline for customer’s software development;

  2 years warranty, and repair for the whole life of our products.

Product Testing

ESD Test Electromagnetic Interference Test Reader EMC Test High And Low Temperature Test

Product Detection

CNC Machining PCBA Test PCBA Production Mold Shell Production
RFID Reader Series

The application environment of RFID is variable and volatile, is your reader able to cope with it?

- Adopting UHF reader chip and 64-bit ARM processor + Linux platform, Read and write operations are fast and stable, compatible with multi-protocol RFID tag reading.
- Support dual-band protocol segment free switching work. RSSI (Return signal strength Inspection) Debugging software multi-communication mode interface, PoE powered.
- Supply SDK with multi-language, benefit to system integration development.
Advantages of UHF RFID Integrated Reader

- The antenna and reader board are integrated in the sealed housing, and the working protection level can reach IP67 or above;
- Since the housing of the back cover of the reader is made of metal material, it is convenient for RFID reader to dissipate heat, which is beneficial to long-term outdoor work;
- RFID integrated reader’s interface is simple to wire, mainly for power and communication lines, very suitable for rapid deployment;
- RFID integrated reader’s accessories clip pole is easy to install, non-professionals person can also construct it;
- RFID integrated reader has a beautiful appearance, and the cover can be mass-produced by ABS plastic for industrial design molds, and anti-aging and anti-UV formulas are added;
- RFID integrated reader is cost-effective, the price is relatively cheap.

Application field of UHF RFID Integrated Reader

- The integrated reader/writer is mainly used for the identification of vehicles and personnel, the identification of industrial production line materials, etc., and the non-intensive need to read a large number of labels;
- The integrated reader reading distance can be based on the use of the scene, the need to read the distance, antenna illumination angle to select different gain size, illumination angle of the integrated reader;
- VANCH Intelligent has 2dBi, 5dBi, 7dBi, 9dBi, 12dBi antenna to integrate with reader board respectively, corresponding reading distance of 2 meters, 5 meters, 7 meters, 9 meters, 12 meters, etc. (can adjust the output power of the reader to adjust the reading distance).
### VI-83T Specification

- Industrial design with power supply, direct-current 9 ~ 24V wide voltage input;
- The shell is made of high-strength aluminum alloy, solid and durable, which is good for heat dissipation and long-term outdoor work;
- The integrated chip for RF transmission is low power consumption & high integrated & high stability;
- RF receiver adopts three-stage amplifying receiving circuit that greatly improves the receiving sensitivity of RF signal;
- Power amplification uses high-power, high-efficiency famous RFMD amplifiers to ensure RF reading and writing fluent;
- STM-Cortex-M3 core CPU processor possesses ultra-low power consumption, ultra-high performance, make the reader program and interface run more stable and faster;

### UHF RFID Parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFID reader module</td>
<td>VANCH brand</td>
</tr>
<tr>
<td>Frequency range</td>
<td>902<del>928MHz or 865</del>868MHz (customization optional)</td>
</tr>
<tr>
<td>Antenna gain</td>
<td>7dbi Circular polarization antenna</td>
</tr>
<tr>
<td>Protocol</td>
<td>EPCglobal UHF Class 1 Gen 2 / ISO 18000-6C</td>
</tr>
<tr>
<td>RF output</td>
<td>30dBm (±1dBm) adjusted</td>
</tr>
<tr>
<td>Output power adjustment</td>
<td>1dBm (set by VANCH software)</td>
</tr>
<tr>
<td>Reading distance</td>
<td>Reading distance 3~5M (test tag Impinj E41b); writing distance&gt;50cm</td>
</tr>
<tr>
<td>Multiple tag reading rate</td>
<td>&gt;50pieces/second (peak)</td>
</tr>
<tr>
<td>Region support</td>
<td>America, Canada and other FCC Part 15 compliant regions, Europe and other areas that comply with ETSI EN 302 308, China, India, Japan, Korea, Malaysia, Taiwan</td>
</tr>
</tbody>
</table>

### Electric parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU control chip</td>
<td>ARM (STM32F107 Cortex-M3)</td>
</tr>
<tr>
<td>Communication Interface</td>
<td>RJ45, RS485, RS232, Wiegand interface, wireless WIFI, Bluetooth 4.2</td>
</tr>
<tr>
<td>Bluetooth</td>
<td>Optional</td>
</tr>
<tr>
<td>WiFi</td>
<td>802.11b/g/n Optional</td>
</tr>
<tr>
<td>Serial port rate</td>
<td>9600~115200bps</td>
</tr>
<tr>
<td>RJ45</td>
<td>10Mbps</td>
</tr>
<tr>
<td>GPIO interface</td>
<td>1 relay output, 1 trigger input</td>
</tr>
</tbody>
</table>

### Physical parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension</td>
<td>217 (L) * 217 (W) * 70 (H) mm (Bracket not included)</td>
</tr>
<tr>
<td>Weight</td>
<td>2.5kg (package included)</td>
</tr>
<tr>
<td>Outside shell material</td>
<td>ABS + PC</td>
</tr>
<tr>
<td>Antenna branch material</td>
<td>Galvanized rust-proof iron</td>
</tr>
<tr>
<td>Installation mode</td>
<td>Pole mounting</td>
</tr>
<tr>
<td>Antenna cover color</td>
<td>Ceramic white or warship ash</td>
</tr>
<tr>
<td>Antenna back cover</td>
<td>Die-cast aluminum alloy</td>
</tr>
</tbody>
</table>

### Dimension
Antenna Cover Color (Optional)

- Ceramic White
- Warship Grey

Accessory (Six-piece Set)

Installation Diagram

Other Series of Products (Selected by Reading Range)

- Model#: VI-83T
  Dimension: 217 (L) * 217 (W) * 70 (H) mm
  Weight: 2.6kg (package included)

- Model#: VI-86
  Dimension: 306 (L) * 306 (W) * 25 (H) mm
  Weight: 2.6kg (package included)

- Model#: VI-89
  Dimension: 260 (L) * 260 (W) * 65 (H) mm
  Weight: 3.0kg (package included)

- Model#: VI-88T
  Dimension: 450 (L) * 450 (W) * 40 (H) mm
  Weight: 4.0kg (package included)
Advantages of RFID Fixed reader

- The control circuit and RF circuit of RFID fixed reader are more complicated, and the performance requirements for reader are high, especially the technology such as radio frequency interference cancellation and multi-tag reading anti-collision algorithm.
- The RF output power of RFID fixed reader can reach 30-33dBm. It is better than RFID integrated reader in reading distance and reading multiple tags.
- RFID fixed reader has more functions, more choices such as GPIO interface and communication interface, and it is easier to realize the integration of project system.
- The outdoor installation of RFID fixed reader needs to be equipped with a waterproof outer box. The working between the reader and the antenna needs to be connected through a coaxial feeder with good quality to ensure long-term stable operation.
- RFID fixed readers have a wider application scenario, reader can be competent for more complex work environments, for example; require fast reading, large inventory, long distance, fast speed, etc.
  
  VANCH RFID fixed readers have fixed-type readers consisted of MCU micro-controller, ARM chip, linux, Android OS, Apple IOS system and other technical platforms to meet the needs of customers in all aspects.
  
  Vanch Fixed reader adopt carrier suppression and multi-tag anti-collision algorithm core technology functions.

Application areas of RFID fixed reader

- RFID fixed readers are commonly used in warehouse logistics, supply chain environment material inventory, inbound and outbound management, clothing, shoes and hats, jewelry retail department stores, cluster factories to terminal retail store management; also commonly used for anti-counterfeiting traceability, books and archives Management.

Guide of selecting UHF RFID Fixed Reader

RFID Fixed reader, also known as split RFID reader, the read/write part of the fixed reader is arranged separately from the RFID antenna, and the RF signal between them is connected by coaxial cable.

UHF RFID Fixed Reader

VF-747

Classic product in RFID reader field, totally sales of more than 30 thousands units with 7 years.

Classic product in RFID reader field, totally sales of more than 30 thousands units with 7 years.
VF-747 Specification
- Adopt Impinj UHF reader chip and TI ARM embedded processing chips to achieve high-speed reading and data fast operation;
- Full support to meet the EPC global UHF Class1 Gen2 / ISO 18000–6C / ISO18000–6B electronic tag standard;
- RS232, RS485 and TCP / IP network communication;
- Output power reach 32dBm, it is adjustable. Support active mode, command mode and trigger mode;
- Reading buzzer and LED status indication; support online upgrade for hardware by communication port;
- Reader supply multi I/O input output connectors, convenient for device to integrate and application;
- Highly reliable design for industrial structure to meet the demanding work environment.

Performance Index

<table>
<thead>
<tr>
<th>Performance Index</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency range</td>
<td>860–868MHz, 902–928MHz (can be customized)</td>
</tr>
<tr>
<td>Frequency modulation</td>
<td>FHSS or fixed-frequency, can be set by software</td>
</tr>
<tr>
<td>RF output</td>
<td>+10.0 to +30.5 dBm; 50 ohm load</td>
</tr>
<tr>
<td>Peak inventory speed</td>
<td>&gt; 500 tags/sec</td>
</tr>
<tr>
<td>Tag Buffer Size</td>
<td>800 tags @ 96 bit EPC</td>
</tr>
<tr>
<td>Tag RSSI</td>
<td>Supported</td>
</tr>
<tr>
<td>Antenna Detector</td>
<td>Supported</td>
</tr>
<tr>
<td>Ambient Temp Monitor</td>
<td>Supported</td>
</tr>
<tr>
<td>The number of antennas</td>
<td>1/2/4 TNC antenna connectors for selections</td>
</tr>
<tr>
<td>Communication interface</td>
<td>10M/100MAdaptive Ethernet, RS232, RS485, Wiegand26/34 interface</td>
</tr>
<tr>
<td>Communication rate</td>
<td>Serial rate 9600~115200bps, RJ45 is 10Mbps</td>
</tr>
<tr>
<td>Secure firmware upgrade</td>
<td>The upgrade mechanism can be extended</td>
</tr>
<tr>
<td>input / output (GPIO)</td>
<td>2 inputs, 1 output</td>
</tr>
<tr>
<td>Supported regions</td>
<td>US, Canada and other regions following FCC, Europe and other regions following ETSI EN 302 208 with &amp; without LBT regulations, Mainland China, Japan, Korea, Malaysia, Taiwan</td>
</tr>
</tbody>
</table>

Mechanical electrical performance

<table>
<thead>
<tr>
<th>Mechanical electrical performance</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension</td>
<td>200 (L) * 200 (W) * 35 (H) mm</td>
</tr>
<tr>
<td>RF Connector</td>
<td>TNC</td>
</tr>
<tr>
<td>Power</td>
<td>With 220V AC input, the output of +12 V/3A DC power converter</td>
</tr>
<tr>
<td>IP rating</td>
<td>IEC IP53</td>
</tr>
<tr>
<td>Operating Temp.</td>
<td>-20°C to +70°C</td>
</tr>
<tr>
<td>Storage Temp.</td>
<td>-40°C to 80°C</td>
</tr>
<tr>
<td>Humidity</td>
<td>5% to 95%, Non-condensing</td>
</tr>
</tbody>
</table>

Other Series of Products (Selected by External SMA antenna interface)

VF-747 specification
- Model#: VF-747
- Dimension: 200 (L) * 200 (W) * 35 (H) mm
- Weight: <2 KG
- External SMA antenna interface: 4

VF-787 specification
- Model#: VF-787
- Dimension: 200 (L) * 200 (W) * 35 (H) mm
- Weight: <2 KG
- External SMA antenna interface: 8
UHF RFID
Multi Ports Fixed Reader

VF-P16 Specification
- Fully support compliance EPC global UHF Class 1 Gen 2 / ISO 18000–6C/ ISO18000–6B Standard tag;
- Working frequency 860–960mhz,(can be customized);
- Support RS232,RS485, TCP/IP and wireless network communication etc;
- Output power is 30dBm can be customized, read tag peak speed > 700 piece/s;
- Support multiple work modes including active mode, command mode, trigger mode etc;
- RF adopt IndyR2000chip of American Impinj company, with high performance multi-tags recognition algorithm, its performance can compete with products imported from Europe and the United States;
- LED State indication, support firmware online update through communication interface;
- Products through the authority of domestic and foreign authority testing certification, FCC, CE, no Commission certification etc.

Performance index

<table>
<thead>
<tr>
<th>Frequency range</th>
<th>860Mhz – 960Mhz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency modulation</td>
<td>FHSS or fixed-frequency, can be set by software</td>
</tr>
<tr>
<td>RF output</td>
<td>10–30 dBm customized 50 ohm load</td>
</tr>
<tr>
<td>Read tag peak speed</td>
<td>&gt; 700 tags/second</td>
</tr>
<tr>
<td>Tag Cache area</td>
<td>800 tags @ 96 bit EPC</td>
</tr>
<tr>
<td>Supported</td>
<td>Tag-RSSI, Antenna Detector, Ambient Temp Monitor, multi-tag anti-collision algorithm</td>
</tr>
<tr>
<td>The number of antennas</td>
<td>16 / 32 SMA Antenna interface</td>
</tr>
<tr>
<td>communication interface</td>
<td>10M/100MAdaptive Ethernet, RS232, RS485</td>
</tr>
<tr>
<td>Communication rate</td>
<td>Serial rate 9600~115200bps, RJ45 is 10Mbps</td>
</tr>
<tr>
<td>Secure firmware upgrade</td>
<td>The upgrade mechanism can be extended</td>
</tr>
<tr>
<td>Input / output (GPIO)</td>
<td>5 Optical isolation inputs, 5 Optical isolation output</td>
</tr>
<tr>
<td>Software Development Kit</td>
<td>c++, java, c#</td>
</tr>
<tr>
<td>Work area support</td>
<td>US, Canada and other regions following U.S. FCC</td>
</tr>
<tr>
<td></td>
<td>Europe and other regions following ETSI EN 302 208 with &amp; without LBT regulations, Mainland China, Japan Korea, Malaysia, Taiwan</td>
</tr>
</tbody>
</table>

More than 32 ports for RFID antennas, meet the demands of applications need multi antennas, greatly reducing the cost.
Tag operation performance

Reading range: 9dbi antenna configuration, Reading distance 3~15M (test tag Impinj E411)

Protocol: EPCglobal UHF Class 1 Gen 2 / ISO 18000-6C, ISO18000-6B

Maximum receiver sensitivity: -82 dBm; Maximum return loss: 10 dBm

Mechanical electrical performance

Power Supply: With 220V AC input, the output of ±12 V/3A DC power converter

Humidity: 5% to 95%, non-condensing

Power Consumption: Less than or equal to 15W

RF output interface: SMA connector

IP rating: IEC IP53

Operating Temp.: -20℃ to +70℃

Storage Temp.: -20℃ to 85℃

Certifications: FCC / CE

Other Series of Products (Selected by External SMA antenna interface)

Model#: VF-P32
Dimension: 210 (L) * 150 (W) * 26.5 (H) mm
Weight: 1.5kg (package included)
External SMA antenna interface: 32

VF-S108

Vanch Fixed reader adopt carrier suppression and multi-tag anti-collision algorithm core technology functions.
VF-S108 Specification

VF-S108 Internet of Things Android RFID reader, reliably work every day in the world, through wireless RF signal identification to connect to enterprise, government, commercial retail, inventory management, and asset tracking and other valuable applications, accurate and timely data collection and transmission Let the digital world of the Internet of Everything become a reality!

- Qualcomm MSM8909 chip platform, 1.8GHz quad-core A7 processor, clocked at up to 1.8GHz, using Mali-T764 GPU, supporting 4K, H.265 hard decoding;
- The RF channel uses the US Impinj indyR2000 chip and has excellent multi-tag recognition performance.
- The super-communication interface design makes the professional technology simple, no need to increase the amount of expenses, integrated Bluetooth, WiFi, 4G full Netcom.

Industrial design, full metal housing
Made of aluminum alloy, it is durable and durable for harsh environments.

Flexible and convenient communication and rich interface
RS232, USB OTG interface, 4 input and output interfaces.

Support audio and video multimedia interface
Support HDMI video output.

Meet the harsh environment
Adopting the perfect multi-tag anti-collision algorithm and carrier suppression core technology.

Physical parameter

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Size</td>
<td>215 (L) * 185 (W) * 34 (H) mm</td>
</tr>
<tr>
<td>Weight</td>
<td>1.5KG</td>
</tr>
<tr>
<td>Housing material</td>
<td>Die-cast aluminum alloy</td>
</tr>
<tr>
<td>Protection level</td>
<td>IEC IP54</td>
</tr>
</tbody>
</table>

Electrical parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating system</td>
<td>Android 5.1/6.0/7.1</td>
</tr>
<tr>
<td>CPU processor</td>
<td>Qualcomm MSM8909 chip platform, 1.8GHz quad-core A7 processor</td>
</tr>
</tbody>
</table>

GPU graphics processor
Supports 4K, H.265 hard decoding with Mali-T764 GPU

RAM+ROM memory
LPDDR2+eMMC 2GB/4GB/16GB/32GB

Built-in storage SD
Support SD card *, up to 128GB

USB interface
USB2.0 or higher*, USB OTG

HDMI
Support video 1+HDMI interface (1080P)

Input voltage
DC12/3A

Power
25W (RF output power 30dBm)

Stand by
Ambient temperature detection; Tag RSSI, Antenna connection protection

I/O interface
4 optocoupler inputs (initial low level), 4 relay outputs (loadable DC24V/2A)

Environmental parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature</td>
<td>-20° ~ +85°</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>-40° ~ +85°</td>
</tr>
<tr>
<td>Environment humidity</td>
<td>&lt;95% (non-condensing state)</td>
</tr>
</tbody>
</table>

Tag reading range (depend on tag size)

5 - 25 m
**UHF RFID**

**Android Fixed Reader**

VF–S08

- Fully support compliance EPCglobal UHF Class 1 Gen 2 / ISO 18000-6C/ ISO18000-6B Standard tag;
- Working frequency 860–868mhz, 902–928mhz(can be customized);
- Support RS232, RS485, TCP/IP and wireless network communication etc;
- Support 8 external SMA antenna interface;
- Output power is 30dBm can be customized, read tag peak speed > 700 piece/s;
- Support multiple work modes including active mode, command mode, trigger mode etc;
- LED State indication, support firmware online update through communication interface;
- Reader provide 2 way optical isolated input, 2 way optical isolated output I/O interface, which benefit for product application and integrated.

**VF–S08 Specification**

- **OS**
  - Android 5.1 above
- **CPU**
  - RK3288 Cortex-A17 4-core processor, 1.8GHz
- **GPU**
  - Mali-T764 GPU, support 4K, H.265 hard decode
- **RAM+ROM**
  - LPDDR2+eMMC 2GB/4GB+8GB/16GB/32GB
- **Memory**
  - Support SD card*1, 128GB at max
- **USB interface**
  - Support USB2.0 above versions*2 channels, USB OTG
- **HDMI**
  - Support video 1*HDMI interface (4K: 3840x2160)
- **Earphone interface**
  - 3.5mm earphone interface, built-in audio amplifier, speaker, earphone
- **Input voltage**
  - DC12/3A
- **Power**
  - 25W (RF output power 30dBm)
- **Ambient Temp. Detection**
  - Tag RSSI; Antenna connect protection
- **WIFI**
  - Support IEEE 802.11 n/b/g

**Electric parameter**
UHF RFID

Linux OS RFID Fixed Reader

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPS</td>
<td>Support GPS+GLONASS+BeiDou</td>
</tr>
<tr>
<td>Bluetooth</td>
<td>Support Bluetooth 4.0</td>
</tr>
<tr>
<td>HDMI</td>
<td>Support</td>
</tr>
<tr>
<td>Communication rate</td>
<td>Serial rate 9600~115200bps, RJ45 is 10M/100Mbps, USB2.0</td>
</tr>
<tr>
<td>Input / Output (GPIO)</td>
<td>2 inputs, 4 output</td>
</tr>
<tr>
<td>Software Development Kit</td>
<td>c++ java c# Library cross-platform (windows/linux/osx)</td>
</tr>
<tr>
<td>Supported regions</td>
<td>US, Canada and other regions following U.S. FCC</td>
</tr>
<tr>
<td></td>
<td>Europe and other regions following ETSI EN 302 208 with &amp; without LBT regulations, Mainland China, Japan Korea, Malaysia, Taiwan</td>
</tr>
<tr>
<td>Reading distance</td>
<td>9dBi Antenna configuration, typical read range: 15 to 25 m (depends on tag)</td>
</tr>
<tr>
<td>Protocol</td>
<td>EPCglobal UHF Class 1 Gen 2 / ISO 18000-6C / ISO18000-6B</td>
</tr>
<tr>
<td>Receive sensitivity</td>
<td>&lt; ~ 85dBm</td>
</tr>
<tr>
<td>Physical Parameters</td>
<td></td>
</tr>
<tr>
<td>Dimension</td>
<td>210 (L) * 185 (W) * 30 (H) mm</td>
</tr>
<tr>
<td>Power</td>
<td>With 220V AC input, the output of +12 V/3A DC power converter</td>
</tr>
<tr>
<td>RF Connector</td>
<td>SMA</td>
</tr>
<tr>
<td>Weight</td>
<td>1.5 kg</td>
</tr>
<tr>
<td>Humidity</td>
<td>5% to 95% (non-condensing)</td>
</tr>
<tr>
<td>IP rating</td>
<td>IEC IP53</td>
</tr>
<tr>
<td>Operating Temp.</td>
<td>-20℃ to +70℃</td>
</tr>
<tr>
<td>Storage Temp.</td>
<td>-20℃ to 85℃</td>
</tr>
<tr>
<td>Housing material</td>
<td>Aluminium alloy</td>
</tr>
</tbody>
</table>


deck reading range (depend on tag size)
VF-987 Specification

- Support EPC global UHF Class 1 Gen 2 / ISO 18000-6C/ ISO18000-6B standard rfid tags;
- Working frequency 860-868MHz, 902-928MHz (Can be adjusted according to the requirements of different countries or regions);
- Support RS232, RS485, TCP/IP and wireless communication ways;
- Support 8 external SMA antenna interface;
- Output power up to 33dbm (Adjustable), inventory tags peak velocity > 700 PCS/SEC;
- Support active, command and trigger a variety of work modes;
- Reading buzzer and LED status indicator; Support online upgrade firmware through communication interface;
- Reader provide 4 road light isolated input, 4 road light output I/O interface, convenient for application integration;

Performance Index

<table>
<thead>
<tr>
<th>Frequency range</th>
<th>860Mhz – 960Mhz (Can be adjusted according to different countries or regions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency modulation</td>
<td>FHSS or fixed-frequency, can be set by software</td>
</tr>
<tr>
<td>RF output</td>
<td>20 to +30 dBm, 50 ohm load</td>
</tr>
<tr>
<td>Peak inventory speed</td>
<td>&gt; 700 tags/sec</td>
</tr>
<tr>
<td>Tag Buffer Size</td>
<td>800 tags @ 96 bit EPC</td>
</tr>
<tr>
<td>Tag RSSI</td>
<td>Supported</td>
</tr>
<tr>
<td>Antenna Detector</td>
<td>Supported</td>
</tr>
<tr>
<td>Ambient Temp Monitor</td>
<td>Supported</td>
</tr>
<tr>
<td>The number of antennas</td>
<td>8 SMA Antenna interface</td>
</tr>
<tr>
<td>Communication interface</td>
<td>RS232, RS485, TCP/IP interface</td>
</tr>
<tr>
<td>Communication rate</td>
<td>Serial rate 9600~115200bps, RJ45 is 10/100Mbps</td>
</tr>
<tr>
<td>Communication interface option</td>
<td>Wiegand54, 26, CAN, WIFI, Bluetooth, 4G</td>
</tr>
<tr>
<td>Secure firmware upgrade</td>
<td>The upgrade mechanism can be extended</td>
</tr>
</tbody>
</table>

Tag Operation Performance

- Reading distance | 9dBi Antenna configuration, typical read range: 3 to 25 m (depends on tag) |
- Protocol | EPCglobal UHF Class 1 Gen 2 / ISO 18000-6C, ISO18000-6B |
- Maximum receiver sensitivity | -82 dBm; Maximum return loss: 10 dBm |

Mechanical electrical performance

- Dimension | 205 (L) * 100 (W) * 33 (H) mm |
- Power | With 220V AC input, the output of +12 V/3A DC power converter |
- RF Connector | SMA |
- Weight | 1.5 KG |
- Humidity | 5% to 95%, Non-condensing |
- IP rating | IEC IP53 |
- Operating Temp. | -20°C to +70°C |
- Storage Temp. | -20°C to 85°C |
- Certification | FCC, CE |

Tag reading range (depend on tag size)
UHF RFID
X serial RFID Fixed Reader

VF–946
RFID fixed reader with high cost–effective.

VF–946 Specification

- Support EPCglobal UHF Class 1 Gen 2 / ISO 18000–6C / ISO18000–6B standard electronic tags;
- Working frequency 860–868MHz, 902–928MHz (adjustable according to different countries/regions);
- Support RS232, RS485, TCP–IP, WIFI/GPRS is optional;
- Support 1, 2, 4 external TNC antenna port;
- Output RF power up to 30dbm(Adjustable), tag inventory peak velocity > 700 tags/sec;
- Support auto/command/trigger work modes;
- With reading buzzer and LED status indicator; Support online upgrade firmware via communication interface;
- 2-channel light-isolated input and 2-channel light-isolated output I/O interface, convenient for application integration;
- Low power consumption and low voltage design, guarantee the products safe and stable operation for a long time;

Performance Index

<table>
<thead>
<tr>
<th>Frequency range</th>
<th>860Mhz – 960Mhz (Can be adjusted according to different countries or regions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency modulation</td>
<td>FHSS or fixed–frequency, can be set by software</td>
</tr>
<tr>
<td>RF output</td>
<td>20–30dBm; 50 ohm load</td>
</tr>
<tr>
<td>Peak inventory speed</td>
<td>&gt; 700 tags/sec</td>
</tr>
<tr>
<td>Tag Buffer Size</td>
<td>800 tags @ 96 bit EPC</td>
</tr>
<tr>
<td>Tag RSSI</td>
<td>Supported</td>
</tr>
<tr>
<td>Antenna Detector</td>
<td>Supported</td>
</tr>
<tr>
<td>Ambient Temp Monitor</td>
<td>Supported</td>
</tr>
<tr>
<td>The number of antennas</td>
<td>1 / 2 / 4 TNC antenna connectors for option</td>
</tr>
</tbody>
</table>

Low power, low voltage design ideas
Ensure long–term safe and stable operation of the product without failure.

Easy for product application integration
The reader provides 2 optically isolated inputs and 2 optically isolated output I/O interfaces.

Work normal for long term
Software intelligently detect operation status, 24 hours X 365 days run without crash.
### UHF RFID

**X serial RFID Fixed Reader**

#### Communication interface
- 10W/100MAdaptive Ethernet, RS232, RS485, Wiegand26/34 interface

#### Communication rate
- Serial rate 9600~115200bps, RJ45 is 10Mbps

#### Secure firmware upgrade
- The upgrade mechanism can be extended

#### input / output (GPIO)
- 2 inputs, 2 output

#### Software Development Kit
- C++, Java, C#Library cross-platform (windows/linux/osx)

#### Supported regions
- US, Canada and other regions following U.S. FCC
- Europe and other regions following ETSI EN 302 208 with & without LBT regulations, Mainland China, Japan, Korea, Malaysia, Taiwan

### Tag Operation Performance

<table>
<thead>
<tr>
<th>Reading distance</th>
<th>9dbi Antenna configuration, typical read range: 3 to 25 m (depends on tag)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protocol</td>
<td>EPCglobal UHF Class 1 Gen 2 / ISO 18000-6C/ ISO18000-6B</td>
</tr>
<tr>
<td>Maximum receiver sensitivity</td>
<td>-82 dBm; Maximum return loss: 10 Dbm</td>
</tr>
</tbody>
</table>

### Mechanical electrical performance

<table>
<thead>
<tr>
<th>Dimension</th>
<th>235 (L) * 211 (W) * 40 (H) mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>With 220V AC input, the output of +12 V/3A DC power converter</td>
</tr>
<tr>
<td>RF Connector</td>
<td>TNC</td>
</tr>
<tr>
<td>Weight</td>
<td>2.5 KG</td>
</tr>
<tr>
<td>Humidity</td>
<td>5% to 95%, Non-condensing</td>
</tr>
<tr>
<td>IP rating</td>
<td>IEC IP53</td>
</tr>
<tr>
<td>Operating Temp.</td>
<td>-20°C to +70°C</td>
</tr>
<tr>
<td>Storage Temp.</td>
<td>-20°C to 85°C</td>
</tr>
<tr>
<td>Certification</td>
<td>FCC, CE</td>
</tr>
</tbody>
</table>

- Tag reading range (depend on tag size)

---

**VX-647P**

Flexible use of Raspberry Pi (Raspberry Pi) or Arduino (Adino)

Integrated RFID system to meet your project needs
● Adopt Impinj UHF reader chip and Ti ARM embedded processing chips to achieve high-speed reading and data fast operation;
● Full support to meet the EPC global UHF Class1 Gen2 / ISO 18000-6C / ISO18000-6B electronic tag standard;
● Operating frequency is between 860–868MHz / 902–928MHZ (can be adjusted according to different countries or regions);
● RS232, RS485 and TCP / IP communication;
● Output power reach 32dbm, it is adjustable. Support active mode, command mode and trigger mode;
● Support 1, 2, 4 external SMA antenna connections;
● Reading buzzer and LED status indication; support online upgrade for hardware by communication port;
● Reader supply multi I/O input output connectors, convenient for device to integrate and application;

**Performance Index**

<table>
<thead>
<tr>
<th>OS</th>
<th>LINUX2.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>ATSAM9G20</td>
</tr>
<tr>
<td>RAM</td>
<td>SDRAM 64M, NandFlash 128M</td>
</tr>
<tr>
<td>Frequency range</td>
<td>860MHz – 960MHz</td>
</tr>
<tr>
<td>Frequency modulation</td>
<td>FHSS or fixed-frequency, can be set by software</td>
</tr>
<tr>
<td>RF output</td>
<td>20–30 dBm; 50 ohm load</td>
</tr>
<tr>
<td>Peak inventory speed</td>
<td>&gt; 500 tags/sec</td>
</tr>
<tr>
<td>Tag Buffer Size</td>
<td>800 tags @ 96 bit EPC</td>
</tr>
<tr>
<td>Tag RSSI</td>
<td>Supported</td>
</tr>
<tr>
<td>Antenna Detector</td>
<td>Supported</td>
</tr>
<tr>
<td>Ambient Temp Monitor</td>
<td>Supported</td>
</tr>
<tr>
<td>he number of antennas</td>
<td>1 / 2 /4 TNC antenna connectors for option</td>
</tr>
</tbody>
</table>

**VX-647P Specification**

- UHF 860Mhz – 960Mhz
- Frequency modulation: FHSS or fixed-frequency, can be set by software
- RF output: 20–30 dBm, 50 ohm load
- Peak inventory speed: > 500 tags/sec
- Tag Buffer Size: 800 tags @ 96 bit EPC
- Tag RSSI: Supported
- Antenna Detector: Supported
- Ambient Temp Monitor: Supported
- he number of antennas: 1 / 2 / 4 TNC antenna connectors for option

---

**Tag Operation Performance**

- **Reading distance**: 8dBi Antenna configuration, typical read range: 3 to 25 m (depends on tag)
- **Protocol**: EPCglobal UHF Class 1 Gen 2 / ISO 18000-6C / ISO18000-6B
- **Maximum receiver sensitivity**: -82 dBm; Maximum return loss: 10 dBm

---

**Mechanical electrical performance**

- **Dimension**: 256 (L) * 200 (W) * 86 (H) mm
- **Material**: Pressure casting aluminum alloy
- **Power**: With 220V AC input, the output of +12 V/3A DC power converter/ PoE (option)
- **RF Connector**: TNC
- **Weight**: <3KG
- **Humidity**: 5% to 95%, Non-condensing
- **IP Rating**: IEC IP67
- **Operating Temp.**: -20℃ to +70℃
- **Storage Temp.**: -40℃ to 80℃
- **Certification**: FCC, CE

---

**Supported regions**

- US, Canada and other regions following U.S. FCC
- Europe and other regions following ETSI EN 302 208 with & without LBT regulations, Mainland China, Japan Korea, Malaysia, Taiwan

---

**Tag reading range (depend on tag size)**

![Tag reading range (depend on tag size)](image)
**VI-IR610 Specification**

- Fully support the tags of EPC global Class 1 Gen / 2 ISO 18000-6C standard;
- Frequency range 860-868MHz, 902-928MHz (can be customized);
- Support RS232, RS485; optional access gateway adapter: achieve industrial Ethernet, Profinet;
- RF output power can be adjusted; the distance can be set among 30cm-200cm;
- Support active mode, command mode, triggers mode, etc.
- Read card beep and LED status indication; support for online upgrade of firmware via communication interface;
- It’s ideal equipment selection for industrial production line;
- Software intelligent monitoring of the working state, 24 hours X running for 365 days does not crash;
- Products through the authority of the domestic and international testing institutions certification FCC, CE, no certification, etc.

**Performance Index**

<table>
<thead>
<tr>
<th>RF chip</th>
<th>PR9200 chip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency range</td>
<td>865MHz – 868MHz; 902-928MHz (or customized)</td>
</tr>
<tr>
<td>FM mode</td>
<td>FHSS or fixed frequency, set by the software</td>
</tr>
<tr>
<td>Internal antenna</td>
<td>3dbi Circularly polarized antenna</td>
</tr>
<tr>
<td>Air interface protocol</td>
<td>EPCglobal UHF Class 1 Gen 2 / ISO 18000-6C</td>
</tr>
</tbody>
</table>

The shape is adopt by industrial design, sturdy and durable, meet the hard industrial lines circumstance.

**Independent intellectual property R&D chip**

RF adopts independent intellectual property R&D chip, equipped with high performance tag recognition algorithm, performance is comparable to European and American products.

**Standard interface**

Standard interface with RS232, RS485; optional connection with network gateway adapter to realize industrial Ethernet and Profinet.

**Work normal for long term**

Software intelligently detect operation status, 24 hours X 365 days run without crash.
## Tag operating performance

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read distance</td>
<td>The distance can be set among 30cm~200cm (related to label performance)</td>
</tr>
<tr>
<td>Maximum receiving sensitivity</td>
<td>-80 dBm; Maximum return loss: 10 Dbm</td>
</tr>
<tr>
<td>Air interface protocol</td>
<td>EPCglobal UHF Class 1 Gen 2 / ISO 18000-6C / ISO18000-6B</td>
</tr>
</tbody>
</table>

## Mechanical and electrical properties

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension</td>
<td>95 (L) * 95 (W) * 40 (H) mm</td>
</tr>
<tr>
<td>Connector type</td>
<td>Round waterproof M10 pin socket</td>
</tr>
<tr>
<td>Packing weight</td>
<td>4500g</td>
</tr>
<tr>
<td>Installation method</td>
<td>Metal bracket, reading angle adjustable</td>
</tr>
<tr>
<td>Humidity</td>
<td>5% to 95%, non-condensing</td>
</tr>
<tr>
<td>Protection grade</td>
<td>IEC IP67</td>
</tr>
<tr>
<td>Operating Temp.</td>
<td>- 20°~ + 70°</td>
</tr>
<tr>
<td>Storage Temp.</td>
<td>- 40°~ + 85°</td>
</tr>
</tbody>
</table>

### Tag reading range

(And tag performance is related to antenna gain and size)
### Specification

- **Frequency range:** 902-928MHz (or customized);
- **Support ISO-18000-6B, ISO-18000-6C (EPC G2), TK900 Protocol**;
- **Support LAN and serial port communication interface, the parameter can be customized**;

#### VD-67 Specification

<table>
<thead>
<tr>
<th>Mod#</th>
<th>VD-67</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency range</td>
<td>902-928MHz (or customized)</td>
</tr>
<tr>
<td>FM mode</td>
<td>FHSS or fixed frequency, set by the software</td>
</tr>
<tr>
<td>Antenna connectionqty</td>
<td>Built-in 1 antenna</td>
</tr>
<tr>
<td>Communication interface</td>
<td>USB</td>
</tr>
<tr>
<td>Application software</td>
<td>Provide with DLL, support secondary development</td>
</tr>
<tr>
<td>Reading distance</td>
<td>Read:100mm, Write:50mm</td>
</tr>
<tr>
<td>Air interface</td>
<td>ISO-18000-6B, ISO-18000-6C (EPC G2)</td>
</tr>
<tr>
<td>Dimension</td>
<td>139 (L) x 86 (W) x 22 (H) mm</td>
</tr>
<tr>
<td>Power supply</td>
<td>USB</td>
</tr>
<tr>
<td>Weight</td>
<td>120 g</td>
</tr>
<tr>
<td>Humidity</td>
<td>5% to 95%, non-condensing</td>
</tr>
<tr>
<td>Protection grade</td>
<td>IEC IP52</td>
</tr>
<tr>
<td>Operation Temp.</td>
<td>–20°C to 60°C</td>
</tr>
<tr>
<td>Storage Temp.</td>
<td>–40°C to 80°C</td>
</tr>
</tbody>
</table>

#### VD-68 Specification

<table>
<thead>
<tr>
<th>Mod#</th>
<th>VD-68</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency range</td>
<td>902-928MHz (or customized)</td>
</tr>
<tr>
<td>FM mode</td>
<td>FHSS or fixed frequency, set by the software</td>
</tr>
<tr>
<td>Quantity of antenna</td>
<td>Dual feed point ceramic antenna</td>
</tr>
<tr>
<td>Communication interface</td>
<td>10M/100M ethernet, RS232, RS485, Weigand 26</td>
</tr>
<tr>
<td>SDK interface</td>
<td>Provide dynamic link library (DLL), support the secondary development</td>
</tr>
<tr>
<td>Reading distance</td>
<td>output 20 dBm, Reading distance 10-15cm±5</td>
</tr>
<tr>
<td>Air interface protocol</td>
<td>EPCglobal UHF Class 1 Gen 2 / ISO 18000-6C / ISO18000-6B</td>
</tr>
<tr>
<td>Dimension</td>
<td>200 (L) x 135 (W) x 28 (H) mm</td>
</tr>
<tr>
<td>Power</td>
<td>DC9V/3A Adapter</td>
</tr>
<tr>
<td>Weight</td>
<td>900g</td>
</tr>
<tr>
<td>Humidity</td>
<td>5% to 95%, non-condensing</td>
</tr>
<tr>
<td>Protection grade</td>
<td>IEC IP52</td>
</tr>
<tr>
<td>Operation Temp.</td>
<td>–20°C to 60°C</td>
</tr>
<tr>
<td>Storage Temp.</td>
<td>–40°C to 80°C</td>
</tr>
</tbody>
</table>
Support tags conforming to standards EPC global UHF ISO-18000-6C (EPC G2), TK900;
- Frequency range 902-928MHz (or customized);
- Support multi communication interfaces (LAN, RS232, RS485, Wiegand26/34);
- 4 SMA antenna ports, 7dbi circular polarization antenna, the height of antenna adjustable;
- RF output power 20 ~ 30dBm adjustable, support auto, command, trigger work modes;
- Reliable industry structure design, workable in varied severe environment;
- Based on independent intellectual property development, adapt reader to work with global frequency range.

RFID gate reader is combined by RFID antennas, reader, EAS sound and light alarm system, power supply and other assistant equipments. When goods or person attached with RFID tag go through the channel, RFID antenna will read the information and real time send to reader and related processor, to achieve the goods or person management.

Application: warehouse assets management, meeting attendance, clothes industry, books and files industry, manufacturing control and other open fields with big flows.
### VM-5GA Specification

- **Model**: VM-5GA
- **Working Voltage**: DC 3.5V – 5 V
- **Pcb size**: 50 × 50mm
- **Ceramic antenna size**: 40 × 40mm
- **Overall height**: 8.5mm
- **Standby current**: < 80mA (EN pin high level)
- **Sleeping current**: < 100uA (EN pin low level)
- **Operation current**:
  - 260mA @ 3.5V (26 dBm Output, 25°C)
  - 110mA @ 3.5V (18 dBm Output, 25°C)
- **Operating time**: < 100mS
- **Operation temp.**: - 20 °C - + 70 °C
- **Storage temp.**: - 20 °C - + 85 °C
- **Operating humidity**: < 95% ( + 25 °C)
- **Protocol**: EPCglobal UHF Class 1 Gen 2 / ISO 18000-6C
- **Frequency**: 840-860MHz
- **Output power**: 18-26 dBm
- **Read**: 200-250cm
- **Write**: 10-50cm
- **Receive sensitivity**: < -70 dBm
- **Store tag peak speed**: > 50pcs/sec
- **Tags storage capacity**: 20pcs tags @ 96 bit EPC
- **Communication interface**: TTL UART interface
- **Communication baud rate**: 115200 bps, 38400 bps
- **Heat-dissipating method**: Air cooling

---

### VM-5F Specification

- **Model**: VM-5F
- **Working frequency**: 865-868MHz, 902-928MHz
- **Maximum output power**: 18-26 dBm
- **Output power accuracy**: +/- 1dB
- **Communication interface**: TTL UART interface
- **GPIO**: 2-channel input 2-channel output
- **Communication baud rate**: 115200 bps, 38400 bps
- **Read**: >20cm
- **Write**: >150cm
- **Protocol**: EPCglobal UHF Class 1 Gen 2 / ISO-18000-6C
- **Store tag peak speed**: > 50pcs/sec
- **Label buffer**: 200pcs label @ 96 bit EPC
- **Tag RSSI**: support
- **work voltage**: DC 3.5V – 5 V
- **Standby current**: < 80mA (EN pin high level)
- **Sleep current**: < 100uA (EN pin low level)
- **Operating Current**:
  - 260mA @ 3.5V (26 dBm Output, 25°C)
  - 110mA @ 3.5V (18 dBm Output, 25°C)
- **start-up time**: < 100mS
- **Operating Temp.**: - 20 °C - + 70 °C
- **Storage Temp.**: - 20 °C - + 85 °C
- **heat dissipation method**: Air cooling
## Specification

- Small dimension, low power, convenient to integrate into internal of handheld reader.

<table>
<thead>
<tr>
<th>Specification</th>
<th>VM-61</th>
<th>VM-64</th>
<th>VM-68</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (PCB length)</td>
<td>55.5 mm</td>
<td>67 mm</td>
<td>67 mm</td>
</tr>
<tr>
<td>Operating Temp.</td>
<td>-20°C ~ + 60°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage Temp.</td>
<td>-20°C ~ + 85°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Humidity</td>
<td>&lt;95% (+25°C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MMCX connector</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMA connector</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protocol</td>
<td>EPCglobal UHF Class 1 Gen 2 / IOS 18000-6C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency</td>
<td>860 Mhz ~ 960 Mhz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td>3.7V~5.25VDC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Current</td>
<td>1.1 A</td>
<td>1.2 A</td>
<td>1.3 A</td>
</tr>
<tr>
<td>Standby current</td>
<td>50 mA</td>
<td>60 mA</td>
<td>70 mA</td>
</tr>
</tbody>
</table>

---

### Connector PIN definition

**Connector Model:** Molex 52261-1571

<table>
<thead>
<tr>
<th>PIN</th>
<th>Definition</th>
<th>Description</th>
<th>PIN</th>
<th>Definition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GDN</td>
<td>Grounding at the same time</td>
<td>8</td>
<td>GPIO 4/5</td>
<td>Universal IO Interface</td>
</tr>
<tr>
<td>2</td>
<td>GDN</td>
<td>Grounding at the same time</td>
<td>9</td>
<td>Buzzer</td>
<td>driven</td>
</tr>
<tr>
<td>3</td>
<td>3.7V ~ 5V DC</td>
<td>Connect to power at the same time</td>
<td>10</td>
<td>UART_RXD</td>
<td>TTL Level</td>
</tr>
<tr>
<td>4</td>
<td>3.7V ~ 5V DC</td>
<td>Connect to power at the same time</td>
<td>11</td>
<td>UART_TXD</td>
<td>TTL Level</td>
</tr>
<tr>
<td>5</td>
<td>GPIO 1</td>
<td>Universal IO interface</td>
<td>12</td>
<td>USB_DM</td>
<td>USB interface</td>
</tr>
<tr>
<td>6</td>
<td>GPIO 2</td>
<td>Universal IO interface</td>
<td>13</td>
<td>USB_DP</td>
<td>USB interface</td>
</tr>
<tr>
<td>7</td>
<td>GPIO 3</td>
<td>Universal IO interface</td>
<td>14</td>
<td>EN</td>
<td>High TTL Level enabled module</td>
</tr>
</tbody>
</table>
UHF RFID
Bluetooth handheld reader

VH–75/75T

Performance Index

<table>
<thead>
<tr>
<th>Performance Index</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFID module</td>
<td>VANCH VM-5GA</td>
</tr>
<tr>
<td>Frequency range</td>
<td>865–868MHz, 902–928MHz (Adjustable)</td>
</tr>
<tr>
<td>Antenna gain</td>
<td>2dbi Circular polarization antenna</td>
</tr>
<tr>
<td>Air–interface protocol</td>
<td>EPCglobal UHF Class 1 Gen 2 / ISO 18000–6C</td>
</tr>
<tr>
<td>RF output</td>
<td>18–26 dBm (adjustable)</td>
</tr>
<tr>
<td>Output power adjustment</td>
<td>1dBm (set by Vanch software)</td>
</tr>
<tr>
<td>Reading distance</td>
<td>Reading distance 2~2.5M (test tag Impinj E41b) ; writing distance&gt;20cm</td>
</tr>
</tbody>
</table>

● Connected with your PDA, smart phone, tablet computer by Bluetooth, convenient and save your cost;
● Reading/Writing under protocols of ISO–18000–6B, ISO–18000–6C (EPC G2) ;
● Provide demo software and SDK based Android/iOS platform system.
● Reliable designation of industrial structure, applicable for tough working environments.
**Multiple tag reading rate**  >50 pieces/second (peak)

**CPU control chip**  ARM (STM32F103)

**Storage space**  2Gb(NandFlash)

**USB**  Micro-B, USB2.0

**Bluetooth**  Bluetooth 4.0

**Communication rate**  Serial rate 9600~115200bps

**Software Development Kit**  Provide demo software and API based Android/iOS platform system.

**Reading Indication**  Buzzer, vibration, LED

**Standby time**  150 h

**Power**  Rechargeable lithium battery (3.7V,3200mAh)

**Dimension**  180 (L) x 65 (W) x 65 (H) mm

**Weight**  250g

**Ingress Protection**  IEC IP64

**Working Temperature**  -20°C to +60°C

**Storage Temperature**  -25°C to 70°C

---

**Accessory (three-piece Set)**

- Battery
- Charger
- Strap

---

**Other Series of Products (Selected by Reading Range)**

- **Model#**: VH-75  
  **Dimension**: 180 (L) x 65 (W) x 65 (H) mm  
  **Weight**: 250g

- **Model#**: VH-75T  
  **Dimension**: 180 (L) x 65 (W) x 65 (H) mm  
  **Weight**: 250g

- **Model#**: VH-76  
  **Dimension**: 180 (L) x 65 (W) x 65 (H) mm  
  **Weight**: 250g
VH-76 Product Introduction

The VH-76 is an innovative UHF back clip reader. The UHF back clip reader uses low-power high-speed Bluetooth 4.0 to communicate with a smart phone. It can be used as a host with Android or Apple IOS smart devices. The device also incorporates ID or 2D scanning capabilities, and the product can meet the needs of various applications to a greater extent.

VH-76 Specification

- Bluetooth communication and online use of existing smartphones reduce project implementation costs;
- Support ISO-18000-6C (EPC G2) protocol UHF electronic tag reading and writing, reading distance up to 7m (reference to AZ9662 tag);
- Easily confirm the reading of the label while easily checking it on the phone display;
- A variety of prompts for reading status (LED indicator, buzzer);
- Removable 6000mAh polymer lithium battery;
- Provide application demo software and SDK development files for Android and Apple IOS operating system.

Suitable for Android | Suitable for phone | Impinj Indy R2000

Data collection

<table>
<thead>
<tr>
<th>RFID module</th>
<th>VANCH VM-61, based on Impinj Indy R2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range</td>
<td>865-868MHz, 902-928MHz(can be adjusted depending on the country or region)</td>
</tr>
<tr>
<td>Air interface protocol</td>
<td>ISO-18000-6C (EPC GLOBAL CLASS 1 Generation2)</td>
</tr>
<tr>
<td>Frequency modulation</td>
<td>FHSS or fixed-frequency, can be set by software</td>
</tr>
<tr>
<td>Output Power</td>
<td>20-33 dBm adjustable (1dBm step adjustable)</td>
</tr>
</tbody>
</table>

Bar code matching

- One-dimensional ID: Zebra SE965 / Honeywell N4313

Suitable for Android | Suitable for phone | Impinj Indy R2000

Communication function

- Display: Android or IOS operating system(4.0~6.0 inch screen optional)
- Button: Scan button, power button 2 pcs
- Tag ID storage(NAND FLASH): 128M
- Tag read prompt: Buzzer, LED, Mobile phone display software
- Battery: 6000mAh lithium battery (for more than 12 hours of continuous operation)
- Charger: Input power: AC100~240V, 50~60HZ, 0.35A
  Output power: USB DC 5.0V, 2.0A, buffer 3 hours
- Charger clip: Optional

Physical parameter

- Shell material: ABS, Mobile phone bracket aviation aluminum
- Size: 248 (L) * 75 (W) * 70 (H) mm
- Weight: Up to 350g (with battery)

Use environment

- Humidity: 5% to 95%, Non-condensing
- Protection level: IEC IP65
- Operating temperature: -20 ºC to +70 ºC
- Storage temperature: -25 ºC to + 75 ºC

Mechanical self-locking
- **Accessories (three sets)**

- **Internal structure**

- **Tag reading distance (refer to AZ9662 tag)**

- **Applicable to mobile phone screen (4.0 – 6.0 inch screen optional)**

- **VH-88**

- **UHF RFID Bluetooth bat reader**
Bluetooth communicated with existing PDA, mobile, tablet to save application cost;
Support ISO-18000-6C (EPC G2) protocol uhf rfid tag;
4~5m reading range based on inlay AZ9662;
Multi-working status indications(LCD, Vibration motor, LED, buzzer);
Built with PCB antenna to reduce weight of reader;
Provide demo software and SDK based Android/iOS platform system.

VANCH VM-61, Impinj indy R2000 chip
Frequency: 865~868MHz, 902~928MHz (customized optional)
Protocol: ISO-18000-6C (EPC GLOBAL CLASS 1 Generation2), ISO-18000-6B
FM mode: Wide spectrum FM (FHSS) or fixed frequency set by software
RF output: 20~33dBm adjustable
Read range: Max. Read >6m, Max. Write >2m (refer to AZ9662 tag)
Antenna: High gain PCB antenna

1D barcode scanner Zebra SE965 / Honeywell N4313
A perfect RFID system can provide reliable data, in addition to being equipped with readers and tags with high performance, high-quality antenna also play a pivotal role.

VANCH Multi-specification, high-quality RFID antenna can solve a variety of application challenges from customers:
- Optimize application read distance;
- Optimize application of beamwidth;
- Adapt to all-weather environmental applications.

### Ceramic Antenna

<table>
<thead>
<tr>
<th>Image</th>
<th>Model#</th>
<th>Frequency</th>
<th>Gain</th>
<th>Polarization</th>
<th>IP Rating</th>
<th>Dimension</th>
<th>Weight</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Image" /></td>
<td>VA-91A Embedded antenna</td>
<td>915MHz(US) 868MHz(EU)</td>
<td>2 dBi</td>
<td>Doubly-fed circular polarization</td>
<td>IP 60</td>
<td>antenna: 40<em>40 PCB: 50</em>50</td>
<td>0.06</td>
<td>SAM antenna interface or custom</td>
</tr>
<tr>
<td><img src="image2" alt="Image" /></td>
<td>VA-91C Ceramic Antenna</td>
<td>915MHz(US) 868MHz(EU)</td>
<td>4 dBi</td>
<td>Doubly-fed circular polarization</td>
<td>IP 60</td>
<td>antenna: 60<em>60 PCB: 70</em>70</td>
<td>0.08</td>
<td>SAM antenna interface or custom</td>
</tr>
</tbody>
</table>

### Flat Antenna

<table>
<thead>
<tr>
<th>Image</th>
<th>Model#</th>
<th>Frequency</th>
<th>Gain</th>
<th>Polarization</th>
<th>IP Rating</th>
<th>Dimension</th>
<th>Weight</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image3" alt="Image" /></td>
<td>VA-906 Near Field Antenna</td>
<td>902–928MHz</td>
<td>5 dBi</td>
<td>Linear polarization</td>
<td>IP 67</td>
<td>295<em>262</em>15</td>
<td>0.5</td>
<td>SMA-female</td>
</tr>
<tr>
<td><img src="image4" alt="Image" /></td>
<td>VA-907 Asset tracking Antenna</td>
<td>860–960MHz</td>
<td>7 dBi</td>
<td>Linear polarization circular polarization (optional)</td>
<td>IP 65</td>
<td>210<em>182</em>45</td>
<td>0.8</td>
<td>SAM antenna interface or custom</td>
</tr>
<tr>
<td><img src="image5" alt="Image" /></td>
<td>VA-909R Asset Management Antenna</td>
<td>915MHz(US) 868MHz(EU)</td>
<td>9 dBi</td>
<td>Circular polarization</td>
<td>IP 67</td>
<td>260<em>260</em>40</td>
<td>1.05</td>
<td>SAM antenna interface or custom</td>
</tr>
<tr>
<td><img src="image6" alt="Image" /></td>
<td>VA-99 Antenna</td>
<td>915MHz(US) 868MHz(EU)</td>
<td>9 dBi</td>
<td>Linear polarization circular polarization (optional)</td>
<td>IP 65</td>
<td>250<em>220</em>60</td>
<td>1</td>
<td>N-female antennas connector or can be customized</td>
</tr>
<tr>
<td><img src="image7" alt="Image" /></td>
<td>VA-993R Antenna</td>
<td>915MHz(US) 868MHz(EU)</td>
<td>9 dBi</td>
<td>Vertical polarization</td>
<td>IP 67</td>
<td>500<em>300</em>25</td>
<td>1.4 (With clamp)</td>
<td>N-female antennas connector or can be customized</td>
</tr>
<tr>
<td><img src="image8" alt="Image" /></td>
<td>VA-910 Antenna</td>
<td>902–928MHz</td>
<td>10 dBi</td>
<td>Linear polarization</td>
<td>IP 67</td>
<td>720<em>150</em>90</td>
<td>4.5</td>
<td>N-female antennas connector or can be customized</td>
</tr>
<tr>
<td><img src="image9" alt="Image" /></td>
<td>VA-94R Flat Antenna Circular</td>
<td>902–928MHz</td>
<td>4 dBi</td>
<td>Circular polarization</td>
<td>IP65</td>
<td>160<em>160</em>90</td>
<td>0.2</td>
<td>N Female</td>
</tr>
</tbody>
</table>
### SHELF/ STORAGE CABINET ANTENNA

<table>
<thead>
<tr>
<th>Image</th>
<th>Model#</th>
<th>Frequency</th>
<th>Gain</th>
<th>Polarization</th>
<th>IP Rating</th>
<th>Dimension</th>
<th>Weight</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>VA-012W</td>
<td>902-928MHz</td>
<td>5 dBi</td>
<td>Linear polarization</td>
<td>IP 67</td>
<td>460<em>90</em>18</td>
<td>0.85</td>
<td>SMA-female or customized</td>
<td></td>
</tr>
<tr>
<td>VA-012W</td>
<td>902-928MHz</td>
<td>12 dBi</td>
<td>Linear polarization</td>
<td>IP 67</td>
<td>290<em>282</em>15</td>
<td>0.9</td>
<td>MMCX connector or can be customized</td>
<td></td>
</tr>
<tr>
<td>VA-0110H</td>
<td>902-928MHz</td>
<td>10 dBi</td>
<td>Linear polarization</td>
<td>IP 53</td>
<td>830<em>100</em>50</td>
<td>0.7</td>
<td>SMA Female</td>
<td></td>
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### PCB ANTENNA

<table>
<thead>
<tr>
<th>Image</th>
<th>Model#</th>
<th>Frequency</th>
<th>Gain</th>
<th>Polarization</th>
<th>IP Rating</th>
<th>Dimension</th>
<th>Weight</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>VA-006</td>
<td>860-960MHz</td>
<td>2 dBi</td>
<td>Vertical polarization</td>
<td>/</td>
<td>90<em>90</em>1.5</td>
<td>0.11</td>
<td>SAM antenna interface or custom</td>
<td></td>
</tr>
<tr>
<td>VA-1010</td>
<td>902-928MHz</td>
<td>4 dBi</td>
<td>Circular polarization</td>
<td>/</td>
<td>100<em>100</em>1.5</td>
<td>0.2</td>
<td>N Female</td>
<td></td>
</tr>
<tr>
<td>VA-0900</td>
<td>902-928MHz</td>
<td>4 dBi</td>
<td>Right circular polarization</td>
<td>/</td>
<td>90<em>90</em>1.5</td>
<td>0.15</td>
<td>SAM antenna interface or custom</td>
<td></td>
</tr>
</tbody>
</table>
### PVC card tags

<table>
<thead>
<tr>
<th>Image</th>
<th>Model#</th>
<th>Application</th>
<th>MHz</th>
<th>Chip</th>
<th>Material</th>
<th>Mounting way</th>
<th>Dimension</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td>VT-80</td>
<td>Access control, City cards, Asset Management Tag</td>
<td>860 - 960</td>
<td>Alien / imp</td>
<td>PVC / PET</td>
<td>Back glue or insert</td>
<td>85 x 54</td>
<td>-20°C ~ 70°C</td>
</tr>
<tr>
<td><img src="image2.png" alt="Image" /></td>
<td>VT-80/8C</td>
<td>Access control, City cards, Asset Management Tag</td>
<td>860 - 960</td>
<td>Alien / imp</td>
<td>PVC / PET</td>
<td>Back glue or insert</td>
<td>85 x 54</td>
<td>-20°C ~ 70°C</td>
</tr>
<tr>
<td><img src="image3.png" alt="Image" /></td>
<td>VT-85/6C (6C14443A)</td>
<td>Access control, City cards, Asset Management Tag</td>
<td>860 - 960</td>
<td>Alien / imp</td>
<td>PVC</td>
<td>Back glue or insert</td>
<td>85 x 54</td>
<td>-20°C ~ 70°C</td>
</tr>
</tbody>
</table>

### Asset management system application tags

<table>
<thead>
<tr>
<th>Image</th>
<th>Model#</th>
<th>Application</th>
<th>MHz</th>
<th>Chip</th>
<th>Material</th>
<th>Mounting way</th>
<th>Dimension</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image4.png" alt="Image" /></td>
<td>VT-117</td>
<td>Container Tracking</td>
<td>860 - 960</td>
<td>Impinj</td>
<td>Polycon bonafite + Iron</td>
<td>Lock mounting mode</td>
<td>115 x 24</td>
<td>-25°C ~ 70°C</td>
</tr>
<tr>
<td><img src="image5.png" alt="Image" /></td>
<td>VT-11</td>
<td>Nail Tag</td>
<td>860 - 960</td>
<td>Impinj</td>
<td>ABE Plastic</td>
<td>nail or insert</td>
<td>45 x 36</td>
<td>-25°C ~ 70°C</td>
</tr>
<tr>
<td><img src="image6.png" alt="Image" /></td>
<td>VT-8554</td>
<td>Smart shelf tag, Plastic tray tag, Asset Management tag</td>
<td>860 - 960</td>
<td>ALIEN / Impinj</td>
<td>ABE Plastic</td>
<td>/</td>
<td>120 x 27 x 2</td>
<td>-20°C ~ 50°C</td>
</tr>
<tr>
<td><img src="image7.png" alt="Image" /></td>
<td>VT-93</td>
<td>Animal tracking, Container seals, Management</td>
<td>860 - 960</td>
<td>ALIEN / Impinj</td>
<td>Mixed polypropylene</td>
<td>/</td>
<td>330 x 2</td>
<td>/</td>
</tr>
</tbody>
</table>

### Laundry/Linen management system laundry tags

<table>
<thead>
<tr>
<th>Image</th>
<th>Model#</th>
<th>Application</th>
<th>MHz</th>
<th>Chip</th>
<th>Material</th>
<th>Mounting way</th>
<th>Dimension</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image8.png" alt="Image" /></td>
<td>VT-85D</td>
<td>Asset management, Laundry management</td>
<td>840 - 960</td>
<td>ALIEN / Impinj</td>
<td>Silicon</td>
<td>/</td>
<td>58 x 12 x 1.8</td>
<td>-20°C ~ 85°C</td>
</tr>
</tbody>
</table>

Cooperation with famous chips supplier NXP, Alien, Impinj.

Supply different UHF RFID tags for your RFID system solution demand.
### Animal/livestocks tracking system animal ear tags

<table>
<thead>
<tr>
<th>Image</th>
<th>Model#</th>
<th>Application</th>
<th>MHz</th>
<th>Chip</th>
<th>Material</th>
<th>Mounting way</th>
<th>Dimension</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Pig ear tag" /></td>
<td>VT-100</td>
<td>Animal husbandry, Precision and identification</td>
<td>860 - 960</td>
<td>Alien</td>
<td>silicone</td>
<td>cotter pin</td>
<td>30*13.3mm and diameter 3mm</td>
<td>-30°C ~ 85°C</td>
</tr>
<tr>
<td><img src="image2" alt="Sheep ear tag" /></td>
<td>VT-10A</td>
<td>Animal husbandry, Precision and identification</td>
<td>860 - 960</td>
<td>Alien</td>
<td>TPU</td>
<td>cotter pin</td>
<td>55*33mm and diameter 33mm</td>
<td>-30°C ~ 85°C</td>
</tr>
<tr>
<td><img src="image3" alt="Cattle ear tag" /></td>
<td>VT-10B</td>
<td>Animal husbandry, Precision and identification</td>
<td>860 - 960</td>
<td>Alien</td>
<td>TPU</td>
<td>cotter pin</td>
<td>female tag/72<em>43mm male tag 35</em>16</td>
<td>-30°C ~ 85°C</td>
</tr>
<tr>
<td><img src="image4" alt="Live-ear tag" /></td>
<td>VT-10C</td>
<td>Animal husbandry, Precision and identification</td>
<td>860 - 960</td>
<td>Higgs 3</td>
<td>PVC</td>
<td>hang</td>
<td>94<em>105mm or 81</em>135mm</td>
<td>-25°C ~ 75°C</td>
</tr>
</tbody>
</table>

### Vehicle management system windshield tags

<table>
<thead>
<tr>
<th>Image</th>
<th>Model#</th>
<th>Application</th>
<th>MHz</th>
<th>Chip</th>
<th>Material</th>
<th>Mounting way</th>
<th>Dimension</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image5" alt="High-temperature windshield tag" /></td>
<td>VT-88E</td>
<td>Asset management, Laundry management</td>
<td>860 - 960</td>
<td>Alien</td>
<td>Higgs-3</td>
<td>/</td>
<td>40 * 24 * 2.2</td>
<td>-20°C ~ 120°C</td>
</tr>
<tr>
<td><img src="image6" alt="Fabric windshield tag" /></td>
<td>VT-86K</td>
<td>Asset management, Laundry management</td>
<td>860 - 960</td>
<td>Code 7M</td>
<td>soft textile</td>
<td>/</td>
<td>70<em>51</em>14.5</td>
<td>-25°C ~ 70°C</td>
</tr>
<tr>
<td><img src="image7" alt="ABS RFD Hard Tag" /></td>
<td>VT-88H</td>
<td>Asset management, Laundry management</td>
<td>860 - 960</td>
<td>Alien</td>
<td>Higgs-3</td>
<td>ABS</td>
<td>68.8 * 30.5 * 20.5</td>
<td>-20°C ~ 70°C</td>
</tr>
<tr>
<td><img src="image8" alt="Washable Textile Tag" /></td>
<td>LA-01</td>
<td>Asset management, Laundry management</td>
<td>860 - 960</td>
<td>Alien</td>
<td>M418</td>
<td>Washable cloth/Sew to Cloth</td>
<td>75 * 36</td>
<td>-20°C ~ 70°C</td>
</tr>
<tr>
<td><img src="image9" alt="Garment Hang Tag" /></td>
<td>LA-00A</td>
<td>Asset management, Laundry management</td>
<td>860 - 960</td>
<td>Alien</td>
<td>impri</td>
<td>Paper</td>
<td>Hang to Cloth</td>
<td>110 * 35</td>
</tr>
</tbody>
</table>

### Personnel tracking system wristband tags

<table>
<thead>
<tr>
<th>Image</th>
<th>Model#</th>
<th>Application</th>
<th>MHz</th>
<th>Chip</th>
<th>Material</th>
<th>Mounting way</th>
<th>Dimension</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image10" alt="Silicon Wristband Tag" /></td>
<td>VT-89G</td>
<td>Hospital, Meeting attendance, Personnel access control</td>
<td>860 - 960</td>
<td>Alien</td>
<td>NXP</td>
<td>buckle</td>
<td>255 * 21 * 10</td>
<td>-25°C ~ 70°C</td>
</tr>
<tr>
<td><img src="image11" alt="Tape Wristband Tag" /></td>
<td>VT-88D</td>
<td>Hospital, Meeting attendance, Personnel access control</td>
<td>860 - 960</td>
<td>Alien</td>
<td>NXP</td>
<td>buckle</td>
<td>250 * 19 * 0.3</td>
<td>-25°C ~ 70°C</td>
</tr>
<tr>
<td><img src="image12" alt="Art Paper Wristband Tag" /></td>
<td>VT-88A</td>
<td>Hospital, Meeting attendance, Personnel access control</td>
<td>860 - 960</td>
<td>Alien</td>
<td>NXP</td>
<td>buckle</td>
<td>92 * 30 * 15</td>
<td>-25°C ~ 70°C</td>
</tr>
<tr>
<td><img src="image13" alt="A R RFID TAG" /></td>
<td>VT-89E</td>
<td>Hospital, Meeting attendance, Personnel access control</td>
<td>920 - 925</td>
<td>Alien</td>
<td>H3</td>
<td>buckle</td>
<td>35 * 31 * 13</td>
<td>-30°C ~ 70°C</td>
</tr>
</tbody>
</table>

### Asset management system anti-metal tags

<table>
<thead>
<tr>
<th>Image</th>
<th>Model#</th>
<th>Application</th>
<th>MHz</th>
<th>Chip</th>
<th>Material</th>
<th>Mounting way</th>
<th>Dimension</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image14" alt="External line patch tag" /></td>
<td>VT-T101C</td>
<td>Second life cycle without tag</td>
<td>860 - 960</td>
<td>Alien</td>
<td>Impri</td>
<td>PET</td>
<td>35 * 33 * 5.3</td>
<td>-30°C ~ 85°C</td>
</tr>
<tr>
<td><img src="image15" alt="Vandal-Resistant tags" /></td>
<td>VT-82/8C</td>
<td>Urban intelligent transportation management</td>
<td>860 - 960</td>
<td>Alien</td>
<td>impri</td>
<td>PET</td>
<td></td>
<td>-30°C ~ 85°C</td>
</tr>
<tr>
<td><img src="image16" alt="Wiper tag" /></td>
<td>VT-87</td>
<td>Vehicle management, Warehouse, plastic pallets, location tags etc.</td>
<td>860 - 960</td>
<td>NXP</td>
<td>(Monza2/3)</td>
<td>PCB antenna, ABS cover, aluminum alloy backplate</td>
<td>Rivets or screws</td>
<td>201 * 12 * 13</td>
</tr>
<tr>
<td><img src="image17" alt="Wristband Tag" /></td>
<td>VT-101B</td>
<td>Vehicle management, Warehouse, plastic pallets, location tags etc.</td>
<td>860 - 960</td>
<td>/</td>
<td>/</td>
<td></td>
<td>110 * 55 * 3</td>
<td>-40°C ~ 85°C</td>
</tr>
<tr>
<td>Model#</td>
<td>Application</td>
<td>MHz</td>
<td>Chip</td>
<td>Material</td>
<td>Mounting way</td>
<td>Dimension</td>
<td>Temperature</td>
<td></td>
</tr>
<tr>
<td>--------</td>
<td>-------------</td>
<td>-----</td>
<td>------</td>
<td>----------</td>
<td>--------------</td>
<td>-----------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>VT-92Q</td>
<td>Anti-Metal Tag</td>
<td>880 ~ 960</td>
<td>Impinj Monza 4QT</td>
<td>ABS Plastic</td>
<td>Screws, rivets or 3M adhesive installation</td>
<td>110 x 25 x 12.85</td>
<td>-20°C ~ 80°C</td>
<td></td>
</tr>
<tr>
<td>VT-40P</td>
<td>Printable UHF Anti-Metal Tag</td>
<td>880 ~ 960</td>
<td>Impinj Monza 4QT</td>
<td>Special anti-magnetic properties of absorbing materials</td>
<td>Adhesive Installation</td>
<td>70 x 30 or 25 x 102</td>
<td>-20°C ~ 70°C</td>
<td></td>
</tr>
<tr>
<td>VT-83</td>
<td>Anti-Metal Tag</td>
<td>880 ~ 960</td>
<td>Alien / Impinj NXP</td>
<td>Special anti-magnetic properties of absorbing materials</td>
<td>Adhesive Installation</td>
<td>95 x 25 x 3.5</td>
<td>-40°C ~ 180°C</td>
<td></td>
</tr>
<tr>
<td>VT-94</td>
<td>Anti-Metal Tag</td>
<td>880 ~ 960</td>
<td>Alien / Impinj NXP</td>
<td>Special anti-magnetic properties of absorbing materials</td>
<td>Adhesive Installation</td>
<td>36 x 13 x 2.7</td>
<td>-25°C ~ 70°C</td>
<td></td>
</tr>
<tr>
<td>VT-94S</td>
<td>Anti-Metal Tag</td>
<td>880 ~ 960</td>
<td>Alien / Impinj NXP</td>
<td>Special anti-magnetic properties of absorbing materials</td>
<td>Backside adhesive</td>
<td>22 x 8 x 2.7</td>
<td>-40°C ~ 80°C</td>
<td></td>
</tr>
<tr>
<td>VT-95</td>
<td>Anti-Metal Tag</td>
<td>880 ~ 960</td>
<td>Alien / Impinj NXP</td>
<td>Special anti-magnetic properties of absorbing materials</td>
<td>Backside adhesive</td>
<td>25 x 9 x 3</td>
<td>-25°C ~ 70°C</td>
<td></td>
</tr>
<tr>
<td>VT-98</td>
<td>High Temperature Anti-Metal Tag</td>
<td>880 ~ 960</td>
<td>Alien / Impinj NXP</td>
<td>Special anti-magnetic properties of absorbing materials</td>
<td>Backside adhesive</td>
<td>21 x 17 x 2</td>
<td>-25°C ~ 180°C</td>
<td></td>
</tr>
<tr>
<td>VT-150</td>
<td></td>
<td>890 ~ 928</td>
<td>Impinj Monza4QT</td>
<td>Metal and liquid environment best</td>
<td></td>
<td>53 x 12.5 x 1</td>
<td>-20°C ~ 85°C</td>
<td></td>
</tr>
<tr>
<td>VT-200</td>
<td>Flexible printable metal</td>
<td>903 ~ 928</td>
<td>Impinj Monza4QT</td>
<td>Metal and liquid environment best</td>
<td></td>
<td>72 x 38 x 0.8</td>
<td>-40°C ~ 85°C</td>
<td></td>
</tr>
<tr>
<td>VT-800</td>
<td></td>
<td>902 ~ 928</td>
<td>Impinj Monza4QT</td>
<td>Metal and liquid environment best</td>
<td></td>
<td>92 x 24 x 1.1</td>
<td>-40°C ~ 85°C</td>
<td></td>
</tr>
</tbody>
</table>
Flexible, Easy to use, Accurate, Economical

Easy operation, industrial printing performance, Meet requirements of different customers.

### Specification

- **Ultra-small tag reader**: supports a minimum height of 12 mm print RFID tag reader;
- **One key location**: one key to locate the position of the tag antenna, automatic detection of the best area to read and write;
- **First print**: Supports a variety of RFID tags first print size, label zero waste.

### Technical specifications

<table>
<thead>
<tr>
<th>Model#</th>
<th>VPR-0407</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printing Methods</td>
<td>Thermal transfer</td>
</tr>
<tr>
<td>Resolution</td>
<td>300 dpi</td>
</tr>
<tr>
<td>Max printing speed</td>
<td>8 ips (203.2 mm/s)</td>
</tr>
<tr>
<td>Max printing width</td>
<td>4.17” (106 mm)</td>
</tr>
<tr>
<td>Max printing Length</td>
<td>79” (2000 mm)</td>
</tr>
<tr>
<td>For RFID models</td>
<td>EPC Class 1 Gen 2 / ISO 18000-6C</td>
</tr>
<tr>
<td>Storage</td>
<td>8 MB FLASc ROM, 16 MB SDRAM</td>
</tr>
<tr>
<td>Label thickness</td>
<td>0.0024”-0.012” (0.06 mm-0.305 mm)</td>
</tr>
<tr>
<td>Paper detection methods</td>
<td>Reflective (removable) / transmissive (moveable)</td>
</tr>
<tr>
<td>Built-in fonts</td>
<td>Western dot matrix font, vector font can be downloaded, Chinese dot-matrix font option</td>
</tr>
<tr>
<td>Power Rating</td>
<td>100-240V 50/60Hz 3.5A</td>
</tr>
<tr>
<td>Weight</td>
<td>15kgs</td>
</tr>
<tr>
<td>Dimensions</td>
<td>Width 11.3” (286 mm) * deep 17.6” (448 mm) * height 11.0” (280 mm)</td>
</tr>
<tr>
<td>Working/Storage Temp.</td>
<td>0°C - 40°C (32°F - +104°F) /-40°C - 60°C (-40°F - +140°F)</td>
</tr>
<tr>
<td>Optional accessories</td>
<td>Cutter, external label rewinding device</td>
</tr>
</tbody>
</table>

Supports a minimum height of 12mm print RFID tag reader.
There are HF(V-HFBOOK99) and UHF(V-UHFBOOK99) two kinds of VANCH Intelligent lending and returning book machine, they have the functions of lending books, returning books, searching books, renewing books, they also support different kinds of reader cards, such as the 1D barcode, 2D barcode, second generation ID card, IC card, ID card and so on. This system adopts strict safe reading and writing tags to design. It has made the system more stable, reliable and refuse the missed reading and wrong reading at the process of lending and returning. This system have vastly improved the reliability and safety of this book machine, it can be widely used in municipal libraries, school libraries, enterprise and public institution and so on.

- **The advantages**
  1. Automatic count on-shelf books.
  2. Monitor books location in real time.
  3. Automatic searching and disappear the books on the wrong book shelf.
  4. Searching for the information of borrowing, renewing, returning and library cards, also with report the loss of library cards.

- **Library automatic lending and returning books machine V-Book 99**

There are HF(V-HFBOOK99) and UHF(V-UHFBOOK99) two kinds of VANCH Intelligent lending and returning book machine, they have the functions of lending books, returning books, searching books, renewing books, they also support different kinds of reader cards, such as the 1D barcode, 2D barcode, second generation ID card, IC card, ID card and so on. This system adopts strict safe reading and writing tags to design. It has made the system more stable, reliable and refuse the missed reading and wrong reading at the process of lending and returning. This system have vastly improved the reliability and safety of this book machine, it can be widely used in municipal libraries, school libraries, enterprise and public institution and so on.

- **Application**

- **Technical specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>V-BOOK 99</th>
</tr>
</thead>
<tbody>
<tr>
<td>Display</td>
<td>19'' inches touch screen</td>
</tr>
<tr>
<td>Working temperature</td>
<td>-10°C ~+50°C</td>
</tr>
<tr>
<td>Working humidity</td>
<td>10%~85%</td>
</tr>
<tr>
<td>Software</td>
<td>Library automatic borrowing and returning system</td>
</tr>
<tr>
<td>Interface connector</td>
<td>10M/100M Ethernet interface</td>
</tr>
<tr>
<td>Power supply</td>
<td>AC220V±10%</td>
</tr>
</tbody>
</table>
RFID Based Intelligent Document Management System

- RFID Based Intelligent Document Management System
  - Insist developing the document storage innovation technology concept, have broken the traditional management model. It has positive adopt RFID document management, improve document data management, information technology upgrading, it can also improve the high standard, high quality, and high-efficient professional service.

- RFID Based Intelligent Document Management System consists of:
  1. Information management system functions modules include:
     - Document management, documents lending management, statistical statement, automatic inventory, handheld inventory, system setting management and so on.
  2. RFID Intelligent Hardware System for document management consists of:
     - RFID reader, multiple antenna distributor, antenna and RFID handheld reader, RFID document tags, storage location tags and so on.

- RFID Document System consists of:
  1. RFID tags (VT-86):
  2. RFID fixed reader (VF-987):
  3. VANCH RFID middleware (VX-3M):
  4. RFID printer (VPR-0407):
  5. RFID document compact shelving antenna VANCH (VA-9101):

- The System Performance
  - The System Performance The labor cost can reduce 20–30%.
  - 99% warehouse products can be visualization, can reduce the risk of goods loss.
  - Improve supply chain management to reduce 20–25% working serving time.
  - Improve information accurate and reliable in warehouse and logistic management.
  - High efficient, accurate data collection, provide working efficiency.
  - Automatically collecting data of in/out of the warehouse, reducing the labor mistakes.
  - Reduce the cost of enterprise warehouse and logistic management.

### Table: RFID Typical Application

<table>
<thead>
<tr>
<th>No.</th>
<th>Products name</th>
<th>Model#</th>
<th>Number</th>
<th>Unit</th>
<th>Reference picture</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Library automatic borrowing and returning inventory store</td>
<td>V-Book 39</td>
<td>1</td>
<td>set</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>RFID library tags printer</td>
<td>VPR-0407</td>
<td>1</td>
<td>set</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>RFID anti-theft gate reader</td>
<td>VC-420TP</td>
<td>1</td>
<td>unit</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>RFID book shelf layer tag</td>
<td>VT-BL21</td>
<td>1</td>
<td>pcs</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>RFID book shelf tag</td>
<td>VT-BL22</td>
<td>1</td>
<td>pcs</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>RFID book tag</td>
<td>VT-86B</td>
<td>1</td>
<td>pcs</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>RFID intelligent book shelf</td>
<td>/</td>
<td>1</td>
<td>unit</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>RFID reader</td>
<td>VF-932</td>
<td>1</td>
<td>pcs</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>RFID library management system</td>
<td>/</td>
<td>1</td>
<td>unit</td>
<td></td>
</tr>
</tbody>
</table>

- RFID Based Warehouse Logistic Management
  - This system can suit for industry enterprise manufacturing warehouse, logistic transit shipment warehouse, retail store warehouse, telecommunication warehouse and electricity warehouse management.

- Warehouse management normally uses barcode tags or artificial warehouse management, this management system have obvious disadvantages:
  - Barcode management: easy copy, not able for dirty-proof, not waterproof, and reading distance is very short.
  - Artificial recording: complicated working, lots of data information can easily lead to mistakes, add the labor cost when storing.

  There is big project doing inventory by hand, leading to long period loss of goods or can not discover the thefts in time.

  With introducing RFID, it can make enterprise warehouse management higher working efficient and more transparent.

  Having RFID inlay packaged into the barcode label, stick to every goods’ package or tray, then you can write goods information, location. You can also write the receiver’s detailed information when the goods are taken out of the warehouse. It can also set RFID fixed reader and RFID handheld reader through warehouse and distribution channels to recognize and monitor the goods circulates.
RFID Typical Application

SYSTEM PRODUCT MANUAL

RFID Industrial Manufacturing Solution

- Intelligent Manufacturing Key Technologies and Solutions
  - Intelligent sensor technology
  - Remote wireless communication technology
  - Robot Application Technology
  - Intelligent equipment and robot integration program
  - RFID technology
  - Intelligent Control System I / O Technology
  - Mechatronics integration technology
  - Electrical control system integration technology
  - Intelligent warehousing logistics solutions
  - MES production management information system solutions
  - Wisdom Factory Solutions

VANCH UHF RFID Barrier-free Conference Attendance System

Based on UHF RFID Barrier-free Conference Attendance System, it can be designed to allow each participant to wear a wireless badge (RFID tag). No need to actively scan tag and can be automatically signed when the participants wear a RFID badge tag walking through entrance. No matter which entrance participant walk through, they can be signed automatically by reading RFID tag on neck without actively scanning. If someone has no RFID tag, it will trigger alarm when passing through entrance. Therefore, it can be achieved that participant can be signed conference automatically and their information can be displayed on LED screen.

- Automatic identification, to avoid crowding
- Participant status verification, to ensure the safety of conference.
- Automatic identification of entrance and exit of participant
- Real-time uploading data, network data sharing.
- Easy to install, easy to use, stable operation
- Large screen can edit welcome information and conference organization.

Relative RFID product for this system

<table>
<thead>
<tr>
<th>Type</th>
<th>Model#</th>
<th>Unit</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Touch screen query machine</td>
<td>VS - 1003B</td>
<td>set</td>
<td>1</td>
</tr>
<tr>
<td>Desktop Reader</td>
<td>VD - 68</td>
<td>set</td>
<td>1</td>
</tr>
<tr>
<td>Meeting gate</td>
<td>VC - 430</td>
<td>set</td>
<td>1</td>
</tr>
<tr>
<td>Conference card</td>
<td>VT - 80</td>
<td>unit</td>
<td>1</td>
</tr>
<tr>
<td>Conference software</td>
<td>Vsoft31</td>
<td>unit</td>
<td>1</td>
</tr>
</tbody>
</table>
Shenzhen VANCH Intelligent Technology Co., Ltd launched a set of RFID-based technology to inventory jewelry and other technical solutions.

Nowadays, RFID technology application has been developing rapidly. RFID-based jewelry management and information management is the important means to strengthen the inventory management, sales management and improve management efficiency.

It will greatly and significantly enhance the efficiency of jewelry business (inventory, warehouse, out/in warehouse), reduce loss rate, increase cash flow rate, enhance corporate brand and more effective to provide advertising, VIP customer management and other value-added services.

**System Composition**

This system consists of RFID jewelry tag, RFID desktop writer, RFID inventory reader, computer, application management software, network cable, switch, middleware and server.

**Effectiveness of Implementation**

After using our RFID reader, handheld reader and automatic tuning, some customers have some feedback as follows.

- The recognition accuracy of jewelry inventory is high and it can avoid repetitive reading, misread or can’t be read, further reduce.
- Improve the efficiency of jewelry quotation: Use our handheld reader program, which not only transition from traditional personnel and professional quotation to the ordinary employees can offer, but also greatly save various jewelry enterprise human resources, reduce the risk of mismanagement.
- A variety of desktop reader for options, it can meet requirement of read speeding and also be selected according to the actual situation without interface. It is easy to use.
- It greatly guarantees jewelry sales security and achieve intelligent sales management. Using smart showcase, you can automatically identify the number of stones in the showcase to reflect daily sales situation. It can also clearly show time of returning jewelry and specific operator, therefore providing a great convenience for the standardization of management planning.
- Reading speed for RFID jewelry tag was significantly improved and greatly speed up the jewelry inventory speed, reduce the loss of theft, for example inventorying 6000 unit jewelry, the inventory time needed change from 4 working days to 0.5 working day.
- The multi-ports reader connect with several antennas, separate time working, separate time switching operations, to a large extent reduce the entire system hardware costs.

The combination of RFID solutions and asset tracking applications not only addresses the worries of jewelers, but also facilitates their business.

VANCH RFID Jewelry Management Solution

**Features and Advantages**

VANCH sport timing system is one of the most accurate, most sensitive and easiest UHF RFID timing systems on the market. It has the most advanced hardware and software design, provided to the event organizers and athletes a good experience.

- **UHF RFID cheap chips**, suitable for thousands of large-scale events, and the chip can be reused.
- The reading technology of the host using the United States the best chip, embedded computer to ensure the most accurate and most sensitive timing effect.
- Each host connected to the timing floor antenna can be able to read 450 chronograph chips (athlete) in one second.
- Easy to install, easy to move, only need to connect four or eight matt antennas, and then connect VANCH timer to the host.
- That is OK.

- RFID timing tag can be attached to shoes or anywhere of athletes, such as chest and back, athletes can wear two RFID timing chips, greatly improving the read rate.
- Built-in high-capacity battery can support the device to use up to 8 hours or more, each time the timing host can connect the matt antenna up to 8 meters.

**Specification**

<table>
<thead>
<tr>
<th>Model</th>
<th>VA-J20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency range</td>
<td>865–868MHz (or Customized)</td>
</tr>
<tr>
<td>Frequency modulation</td>
<td>FHSS or fixed-frequency, can be set by software</td>
</tr>
<tr>
<td>RF output</td>
<td>10–30dBm adjustable; 50 ohm load</td>
</tr>
<tr>
<td>Communication rate</td>
<td>Serial rate 9600–115200bps, RJ45 is 10Mbps</td>
</tr>
<tr>
<td>Read tag speed</td>
<td>400tags/sec</td>
</tr>
<tr>
<td>Memory capacity</td>
<td>900tags/0.9bit</td>
</tr>
<tr>
<td>Antenna</td>
<td>Built-in 2 fixed point ceramic antennas</td>
</tr>
<tr>
<td>Application software</td>
<td>Supply API SDK application routines</td>
</tr>
<tr>
<td>OS</td>
<td>Linux2.6.30</td>
</tr>
<tr>
<td>Support</td>
<td>RSSI, antenna connection protection, Environmental temperature monitoring</td>
</tr>
<tr>
<td>Secure firmware upgrade</td>
<td>The upgrade mechanism can be extended</td>
</tr>
<tr>
<td>Input / output (GPIO)</td>
<td>4 input, 4 output</td>
</tr>
<tr>
<td>The processor</td>
<td>ATMEL AT91SAM9260 CPU, ARM920EJ-S core processor</td>
</tr>
<tr>
<td>Memory capacity</td>
<td>16MB SDRAM, FLASH memory, 128MB * 8 bits Nand Flash (KSFT008J0B)</td>
</tr>
<tr>
<td>Dimension</td>
<td>305 * 201 * 101</td>
</tr>
<tr>
<td>Operation temperature</td>
<td>−20°C to +60°C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>−20°C to 85°C</td>
</tr>
</tbody>
</table>
VANCH sport timing system is one of the most accurate, most sensitive and easiest UHF RFID timing systems on the market. It has the most advanced hardware and software design, provided to the event organizers and athletes a good experience.

- UHF RFID cheap chips, suitable for thousands of large-scale events, and the chip can be reused.
- The reading technology of the host using the United States the best chip, embedded computer to ensure the most accurate and most sensitive timing effect.
- Each host connected to the timing floor antenna can be able to read 450 chronograph chips (athlete) in one second.
- Easy to install, easy to move, only need to connect four or eight mat antennas, and then connect VANCH timer to the host. That is OK.
- RFID timing tag can be attached to shoes or anywhere of athletes, such as chest and back, athletes can wear two RFID timing chips, greatly improving the read rate.
- Built-in high-capacity battery can support the device to use up to 8 hours or more, each time the timing host can connect the mat antenna up to 8 meters.

### Features and Advantages

**RFID Race Timing Solution**

- **V-RTS2000-08 Sport Timing Host**
  - It consists of RFID reader, embedded computers, network components, and power control system components; can connect up to 4 or 8 antennas; provide high sensitivity 450 / sec read

- **Sport Timing Floor Mat Antenna**
  - VA-9108
  - Block design, smooth, soft, waterproof and easy to install, supporting the use of the sport timing host

- **Sport Timing Software**
  - V-RTS2015
  - English interface, fast guide information, suitable for different rules of the game, easy to use

- **Tournament Label**
  - VT-88
  - Waterproof, anti-tear, easy to wear

### Timing Host Parameter Table

<table>
<thead>
<tr>
<th>Model#</th>
<th>V-RTS2000-04</th>
<th>V-RTS2000-08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>6.5 Kg</td>
<td>7.5 Kg</td>
</tr>
<tr>
<td>Continuous Use of Time</td>
<td>13 hours</td>
<td>10 hours</td>
</tr>
<tr>
<td>Read Range</td>
<td>4 m</td>
<td>8 m</td>
</tr>
<tr>
<td>Power Supply</td>
<td>AC110~220V(Built-in 12V 40Ah lithium battery)</td>
<td></td>
</tr>
</tbody>
</table>

### System Product Manual

- Maximum read speed: 300 unit/s
- Receiving sensitivity: -82dBm
- Chip protocol: IOS 18000-6C
- Transmit power: 30 dBm
- Network Type: TCP/IP, WIFI, 3G/4G
- Clock accuracy: One thousandth of a second
- Operating system: Windows 7
- Storage capacity: More than 10 million tag information
- Size: 350 * 260 * 280
- Display size: 7 inch
- Waterproof: IP 54
- Gross Weight: 15 kg
- Software: Grab the data from the host, automatically rank, export and print the results
RFID Urban Intelligent Traffic Solution

Intelligent traffic system is one of the most effective ways to alleviate traffic congestion, reduce traffic accidents, reduce environmental pollution and improve the overall efficiency of traffic system. It has been widely used both overseas and domestically. How to apply RFID radio frequency identification to traffic management has become one of the ways to improve traffic problems today.

Intelligent traffic system is the future trend of urban construction. In traffic information access, traffic control: Transportation industry management, traffic warning and traffic information services, and other aspects of the formation of effective, Usage with a wide range of practical applications.

Urban intelligent transportation system, covering the main roads, hubs and stations, airports and key transport infrastructure and other places and regions, to achieve a comprehensive monitoring of traffic conditions, comprehensive control of road traffic and travel for the traveler, to promote the integration of traffic management and regional traffic integration, to enhance the overall efficiency of the city traffic and intelligent command ability, intelligent transportation is an important system of intelligent city construction system.

RFID Port Management Solution

- **RFID based Vehicle weighting system solution**

  Large energy consumption enterprises, mines, warehouses have a large number of material transport vehicles into the need for parking, registration and other procedures by the operator to manually enter the data into the computer, not only time-consuming, and the error rate. Broad man-made fraud, to the enterprise caused a lot of economic losses. RFID based Vehicle weighting system can effectively solve the above shortcomings of traditional weighing methods, to be measured vehicles are carrying “electronic license plate” – that is, radio tags (tag), vehicle scale measurement, the special reading equipment will automatically equip to the electronic license plate. And the electronic license plate RFID tag can’t be removed once installed (to solve the “cloning car” problem). Electronic license plate RFID tag has been written in the scale to solve the “repeat the scale” problem. Dedicated reader can be integrated with the original weighting system integrated system to achieve automatic measurement, automatic license plate identification integration, completely avoid manual operation, high efficiency.

- **System Features**
  1. All the scale vehicles have a computer automatically record “electronic license plate”, remove the manual intervention electronic license plate can’t be removed once installed.
  2. Electronic license plate data can’t be copied, fundamentally eliminate the copy, forgery, cheating phenomenon.
  3. Dedicated electronic license plate RFID tag can withstand the damp, cold, hot and other harsh environment use.
  4. “Electronic license plate” has no power technology and no maintenance, but has long life.
  5. Fully guaranteed reading distance and identification distance of 7 meters or more can adapt to the speed as high as 80km / h.

- **Port Electronic Terminal. RFID Auto-release Solution**

  Container terminal management system includes electronic plate auto identification system, signal electronic lever control system, weighing data collect system, Container Terminal Management Systems.

- **Purpose of System Design**
  1. Set up intelligent port bayonet system by installing electronic railings control system with the lane signal light, RFID vehicle management system, Weightbridge data collection system, electronic bayonet data real-time processing system, to control the trucks in and out of the port area and provide effective electronic data support for trucks classification.
  2. Install electronic railings control system with the lane signal light to indicate the vehicle to release by port data comparing, barrier up and down and also the traffic lights.
  3. Install RFID vehicle management system for truck driver, distribute the electronic RFID tag with unit ID and related information. The tag will be read and compared with the port management system at the bayonet.
  4. Install RFID data collection system at the weighbridge, to collect data of trucks in/out and calculate cargoes weight in the port area.
  5. Through the electronic bayonet data real-time processing system, to do the devices integration and data communication with the customs regulatory business system.
RFID Typical Application

RFID Food Traceability Management Solution

Food Safety Traceability with UHF RFID Solution

The safety and traceability of food is an increasingly relevant topic for producers, suppliers, and end consumers alike. Regulations like the European Union’s 178/2002 or the United States Department of Agriculture’s 9 CFR lay down binding food safety procedures for members. However, an area where these regulations are not extensively focused is internal traceability. At this stage of production, significant safety advantages are possible. These include the ability to collect more data that will enable substantial improvements in process control and stock management as well as more targeted and precise recall campaigns.

The setup of RFID technology provided by VANCH compiles advantages for food tracking and tracing in meat production facilities, as it allows fully automated noncontact detection along the entire process chain. The transponders are resistant to contamination and survive large temperature fluctuations as well as changes in humidity. Thus, this identification technology is largely maintenance-free. RFID transponders also offer the opportunity during the process to receive and store information. Since they are passive elements, no additional power supply is needed. Today, the customer runs 600 identification systems and 30,000 RFID transponders in their central processing plant—enabling a fully automated and safe internal tracking and tracing of meat.

RFID tag is installed in the package of food. The reader connects with antenna, sensor with reader, RFID tag data will be transferred to Food Safety Management Database via network. All the suppliers register all the information to the RFID Public Service System. Based on food safety management database, integrate with supply chain that the system supplies food safety information service, food safety trace, food quality assess and so on.

● Application Service

Base on the integration between food safety management database and food supply chain information, the system can supply the services as below:

- Food Information Service
  The client search the information via food information service system when they are having dinner, can get the location, producer, date, coocker, style and so on. Also can get the information about transportation and safety when shopping in the supermarket.
- Food Safety Traceability
  Once having an outbreak, the government can confirm the goods information where they are from, where they went, who produced it. Not only tracing the final user, but also the progress when produced and transported so that can supply a solution in time.
- Terminal Search System
  The customer can search the food information in the supermarket via RFID system which is supplied by supermarket or factory.

High-speed Railway inspection equipment tracking system

High-speed railway is a fast and convenient way for people’s travel. How can ensure the safety with high speed? This is the key point that people concern, also it’s the most concerned by the world. With this kind of attention, we walked into the railway section and truly record everything that railway workers did for the safe operation of high-speed railway by Lemis.

The high-speed trains are operated during the day, so the railway workers have to maintenance the train from midnight 0:00 am to 04:00am in the morning. And they call this maintenance point “skylight point”. From 0:00 to 04:00 am, it is the golden time for people to sleep, but the high-speed railway maintenance workers need work highly concentrated without careless during this time. High standards and strict requirements are their working principles. Keep safety for passengers and run railway at high speed is their sacred mission and goals. Day after day, year after year, they quietly dedicate everything to the safety and speed of travellers in dark. In order to ensure the safety and speed of railway transportation, railway maintenance need keep pace with the times urgently. However, railway maintenance is inseparable from the strong support of railway maintenance machinery and equipment. In order to ensure the safe operation of trains at specified speed, high-speed railways have strictly requirements for tools used in the maintenance process. In the “High-speed railway signal operation guidance” (transportation signal [2011] No. 379) document strictly stipulates that the tools must be do inventory checking before & after the road, then they can be erased and delivered use. Most of the inventory management methods currently used are manually counted and confirmed by manpower. Due to the variety of tools used and sorting, the quality of the personnel is uneven, so it is easy to do inventory errors to cause danger for high-speed rail.

In order to eliminate the safety hazards arising from the above—mentioned traditional management methods and improve the management of railway maintenance machinery and equipment. The RFID-based railway maintenance inspection equipment management system came into being. This system is a combination of modern science and technology and economic development. The inspection worker carry it with them during maintenance. When start the work, the tools will be used need do the "warehouse in" process, when tools returned to warehouse, they need scan the tools with tags, and do the "warehouse out" process. When you need leave the inspection/maintenance site, you can use the "Browse" function on the handheld to check tools’s inventory and confirm. If the tool is not returned, the handheld device will prompt the worker by voice that he did not retrieve the lost tool. This management system will greatly improve work efficiency and automation, ensure the tools, tools quantity, tool part no that returned are the same as tools list. This can avoid accidents caused by the missing tools on railway.

● RFID application in railway tools management

Use big data management method, combine with face recognition, bio-palm vein recognition, QRF code scanning. RFID radio frequency identification and other technologies, the unique “identity card” code is assigned to a single substance, and the locomotive is used to detect the data resources of each information system. “Information flow, service distribution, professional management”, to achieve material life cycle and full trajectory tracking management, improve the fine management of enterprise materials.

● RFID Handheld device to check tools details

▲ RFID Handheld device to check tools details  ▲ "palm vein recognition" take tools  ▲ "palm vein recognition" return tools
VANCH Sesame Box New Retail RFID Solution

Product information:
Freezer, normal temperature cabinet, single-door, double-door, multi-door can be used, scan payment, palm vein payment, automatic settlement (WeChat payment, Alipay, Sesame payment).

System software functions module

- Basic information
- System information
- Administration
- Terminal management
- Inventory warning
- Equipment monitoring
- Administrator list
- Message management
- Top-up record
- Terminal management
- Mall order
- Data management
- System function
- Commodity management
- Column management
- Commodity list
- Promotion management
- Red packet management
- Top-up offer management
- Interface Management

Optional product (price)
- Voice module (negotiable)
- Palm vein recognition (negotiable)
- Handheld fast marking machine (negotiable) handheld fast writing equipment
- RFID label (negotiable)
- Wear hanging rack kit (negotiable) bagged products

Model:
WIOT-7721 (Single door) / WIOT-1802 (double-door)
W * D * M (mm)
700 * 700 * 2100 (Single door) / 1844 * 770 * 1940 (double-door)

Remark: this model is Refrigerated storage cabinet
Or choose (normal temperature cabinet, freezer)

Recommend commodity quantity
100 (Single door) / 200 (double-door)

5-layer sensing shelf (standard)

Advertising screen
4G module + antenna
Camera, electronic lock kit, power kit
Sale guide price (negotiable)
Software service fee (negotiable)
Optional product (price)
Voice module (negotiable)
Palm vein recognition (negotiable)
Handheld fast marking machine (negotiable) handheld fast writing equipment
RFID label (negotiable)
Wear hanging rack kit (negotiable) bagged products

Success Projects and Accessories Show

Serve with heart, help you succeed
Let us provide you the product with high quality and attentive service.
We will lead a more prosperous information age.
VANCH Domestic Application Cases

- Rfid Retail
- Wuai Bus Terminal Car Networking System
- Chengdu xiaotong RFID management
- Power supply bureau RFID tool management
- Shenzhen RFID files inventory
- Renmin University of China RFID parking lot management project
- Zhui RFID archives project
- Huawei Feida RFID Management
- Jiangyinyunting middle school RFID personnel management
- Hainan RFID Island and cattle tracing
- RFID military material management
- Rfid libary management
- Heaven RFID warehouse management in logistics company
- RFID Cotton Bags management in Xinjiang
- Beijing AOIT RFID management
- Daqing sofu RFID management project
Vietnam RFID garment processing management

Rfid visitor management, Italy

Philippine parking lot RFID access management

Lithuanian RFID Vehicle Management

Thai bus RFID tracking management

Malaysia logging site RFID wood transportation manages

Jordan RFID Outgoing Management

Turkey RFID Mine assets management

Uzbek Hotel RFID VIP Customer Management

RFID Car management of a European parking lot

Croatian RFID Running-Timing

Indonesian RFID Production Line Management

Rfid tire management for Brazilian customers

Argentina RFID Vehicle Annual Inspection

Portuguese RFID racing system

RFID Management for a Malaysian Steel Works
Guide of selecting UHF RFID Antenna

The RFID reader antenna transmits and receives signals with electrical and magnetic characteristics at the same time. When the radio waves propagate in space, the direction of the electric field changes according to a certain law. This phenomenon is called polarization of radio waves. It can be divided into 2 kinds according to the different polarization.

Linear polarization antenna

The electromagnetic wave propagates completely in the direction of signal propagation (vertical or horizontal) on a plane. When the direction of the tag is known and fixed, the RFID antenna is polarized to match the RFID tag (vertical corresponding to vertical or horizontal corresponding level). It can get the best read rate.

Circular polarization antenna

When the angle between the electric wave polarization plane and the normal earth plane changes from 0 to 360° periodically, that is, the magnitude of the electric field changes, and the direction changes with time, the shape of projection of the electric field vector end trajectory on a plane perpendicular to the direction of propagation is a circle, it’s Circular polarization.

Gain

Gain is a parameter that comprehensively measures the energy conversion and directional characteristics of an antenna. It is defined as the product of the direction coefficient and the antenna efficiency. The higher antenna direction coefficient, the higher gain coefficient.

- Azimuth: A measure of the ability of an antenna to radiate its ability in the desired direction;
- Main lobe width: The main lobe width is the physical quantity that measures the extent of the largest radiating area of the antenna;
- Polarization loss: When the polarization direction of the transmitting signal antenna is inconsistent with the polarization direction of the receiving antenna, polarization loss is usually generated during the receiving process.
Accessories

**RFID PCB board connector**
- MMCX socket
- MCX Male connector

**RF cable**
- 1/2 inch cable
- 178 cable
- 195 cable
- 240 cable
- 316 cable

**Other accessories**
- Power adapter
- Serial cable
- Antenna bracket
- Antenna installation frame
- US plug
- EU plug
- UK plug