Chapter one Introduction

1.1 Company Profile

Shenzhen Goldbridge Co.,Ltd, is specialized in the smart cardsand use of radio frequency identification (RFID) technology high-tech company, the products are industry-leading technology, supply customers for reader/writer, active and passive electronic labels, and various Application solutions. Goldbridge to providing customers with the products, services and solutions of innovative and meeting their basic needs, to create long-term value for our customers.

Goldbridge's products and programmes cover various application fields of the vehicle management, personnel management, logistics management, etc.

Goldbridge company has a strong product development capabilities, the company's core research and development staff have solid theoretical knowledge, rich experience in project development and profound understanding to microwave and radio frequency identification application, ensuring the company's products and services to meet the customers' various needs maximumly.

The company has formed a series of RFID products, several sets of technology solutions, a number of core technologies of the products have been patented or patent-pending.

Thank you for your trust and support for Shenzhen Goldbridge Co., Ltd. ! We will be happy to provide you with a comprehensive and thoughtful service and technical support.

The brochure will introduce the detailed instructions for use of performance, installation, operation and installation of our ACM series readers to you. Before using the reader, please read the brochure and the detailed information for the CD-ROM in order to better experience the convenience and efficiency this product to you.

We welcome you to feedback the views and suggestions on our products to us, we would be delighted to help you.

1.2 Products Introduction

1.21 Summary

Before using the readers, first of all, supply users with a brief introduction to works of radio frequency identification system. Basic radio frequency identification system consists of three parts: the label cards, readers and antenna. Principle: After the authorized and issued label cards entering the magnetic field launched by the antenna, receive a radio frequency signal of the readers, labelling cards with the energy stored in the label by the current access from magnetic induction, sent the Products information stored in the chip of card (passive tags or passive tags), or initiatively send a signal of some frequency (active label or initiative label), after the readers read the message and decode, it will transmit the signal to the client back-end control systems and process relevant data.

Reader's basic function is to provide with the way of data transmission and back-end control system to transmit information between the labels card and it.

The radio frequency identification system and independent developed by themselves, using the most advanced technology design programme at present to design. For passive radio frequency tags, successfully solved the identification problems of the identification of the long-distance, high-speed moving target. Reader design hasWiegand port, output interface of RS485 port and RS232, rich interface facilitate the user to connect with other devices with a convenient choice. Products ensure that on the basis high-tech indicators performance, and extremely meet the green standards of low transmitting power. Its technical indicators are industry-leading position in the same in similar products.

ACM series reader and writer, using design of internal high degree integration, modular and external integration, the product has superior performance, product nice shape, with reading and writing long distance, high speed and accurate data and strong anti-jamming capabilities, and other characteristics, make the features, performance, applications, security and stability of the products have better performance than similar products of the industry.

As good performance characteristics of ACM series reader, in many areas has been widely used. Select our Company's ACM series readers, users also select convenience, efficiency and fast.

ACM series readers have a good performance, excellent quality and good service, products has been widely used in different areas. To meet many users' requirements, the company's products in the constantly improve the quality of the reader at the same time, pay more attention to product series. This suite of products have software developed by our company, users can set different parameters according to different products models and targeting specific requirements, in order to better play the superior performance of the product.

1.22 Application fields

As the advantages of radio frequency identification system, the readers a s part of the core system are also has been widely used in various field s, mainly covers:

Logistics and warehousing management: goods flow and storage manage ment, and e-mail, parcels, luggage transportation, and other mobile Mana gement;

Intelligent Parking: Parking management and automated
fees

Production line management: sentinel identifying of the production proces s;
Highway vehicles do not stop billing: Solving the problems between the c harges of high speed vehicles travelling and traffic;
Access Management: the automated control management
Of personnel and vehicles out and in.

Product security detection: use memory in labels to write protection functi on, for identification of the authenticity of the product;

Pet management: put label cards on pet, under its label cards it can be an effective information

Management of goods inspection: security departments can use the product to do mobile inspection management anytime, anywhere;

Other areas: In the club Management, library, school students, consumer management, time and attendance management, restaurant management, swimming pools management and other systems have been widely used.

1.23 Function instructions

ACM series readers work frequency is the ISM bands (902 ~ 928 MHz), reading and writing with high speed, which can operate multiple labels, only to operate the label of proprietary applications system(through the issuance and mandate of proprietary systems), automatic hopping frequency literacy and strong anti-jamming capabilities, and other characteristics. ACM reader has the following main functions:

1, Read: not only can read the ID of the tags, also can readthe data of designated label orage areas; not only can read the data of single label, and can read the data of multiple labels at the same time;

2, Write: can write data to designated label storage area;

3, LOCK function: set "LOCK" to the designated label storage areas, to prevent the data of the storage area being changed;

4, Enquiry for LOCK: enquire for the latched address of the storage area;

5, through standard interfaces connected with PC, to do communications and data exchange, providing SDK development kits for users to use in secondary development.

Chapter two Installation Guideline

2.1 Hardware installation instructions

2.11 The installation place choice of reader

The principle to choose the installation location of ACM readers is: (1) must ensure that vehicles in some speed passing the effective reading region of readers have enough time to read (at least 20 ms), and make control equipment have enough time for the operation of control gates across moves.

(2) There are not any metal objects obscured between the antenna location and labels.

(3) the distance of reader and antenna installation location as near as possible (for multi-channel fission readers, the longest distance for high-frequency cables is seven meters)

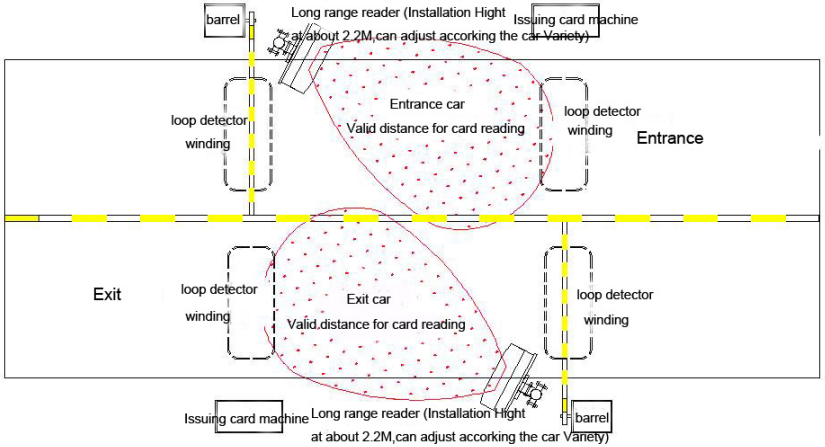
(4) the distance between readers and control equipment (or PC) as near as possible, and use the shielded cable communications as requirements

The implementation of site specific installation is generally determined by the situation at the scene, the following car parking using as an example to illustrate.

(1) Scene installation mode one: road without isolated in the middle refuge, road control equipment (Daozha) installed on both sides of the road, the vehicle passing the reading region with the speed less than 20 km / h.

In such circumstances: require ACM reader (the antenna) to be close to gate barrier equipment, meanwhile make the effective range of reading tags (farthest straight line distance is from 0.5 meters to seven meters) can cover the inlet inductive loop or outlet inductive loop in the entrances and exits, see Figure (one) as below.

The specific installation angle of readers, and other technical adjustments are according to the principle of the tag and reader antenna is relatively parallel.



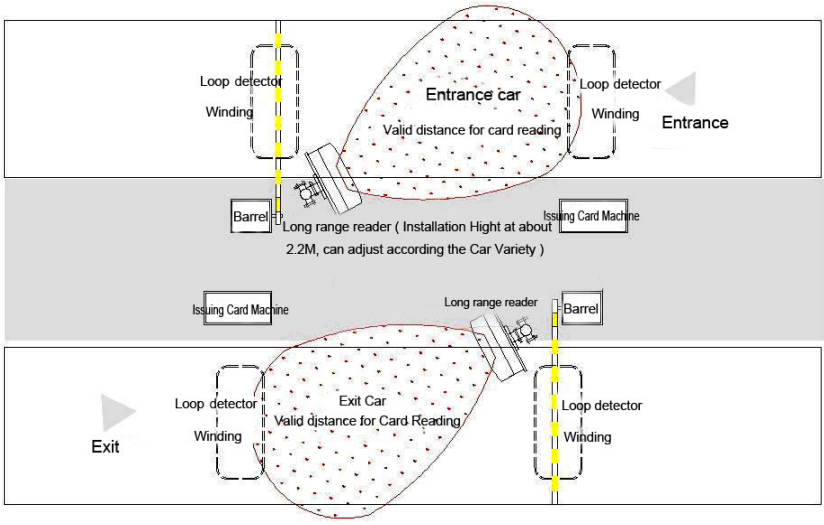
Picture(one)

(2) Scene installation two: there is a middle isolated refugeon the road, control equipment (Barrier) is installed on the security island isolated in the middle, vehicle speed is less than 10 km / h passing the reading region.

(3)

In such circumstances: require ACM reader (the antenna) to be close to gate Barrier equipment, meanwhile make the effective range of reading tags (farthest straight line distance is from 0.5 meters to eight meters) can cover the inlet inductive loop or outlet inductive loop in the entrances and exits, see Figure (two) as below.

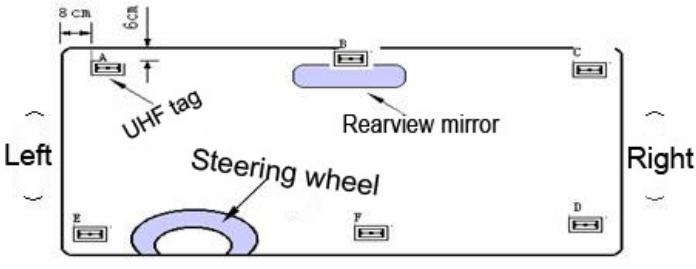
The specific installation angle of readers, and other technical adjustments are according to the principle of the tag and reader antenna is relatively parallel.



Picture (two)

2.12 Installation of electronic tags

The installation location of electronic tags in vehicles A, The application of electronic tags in the vehicle management system will is to install the tags on the front of the car windscreen, see the figure (three) as below. Specific installation location should be based on the installation location of the RF antenna.



Picture（three） Installation place sketch map of electronic tag

The best position of electronic tags: the best location to small car is B, t he best location to large vehicles is F.

Other locations can also be installed, but to determine according to the l ocation of the reader, if the reader installed on the left side (driver's side) in the going ahead direction of road, then the label should also be inst alled on the left side in the car windscreen (A, E-bit) . If the reader inst alled on the right side (vice driver's side) in the going ahead direction of road, then the label should be affixed on the right side of the windscre en of the car (C, D-bit). If readers are installed at the top in the lane, th e label should be installed near the rearview mirror of the car or the ce nter position of car windshield (B, F-bit). For small cars (including ordinar y microbus), the electronic tags should be installed at the top of the fron t windscreen (A, B, C-bit). For large vehicles (trucks or buses, etc.), elec tronic tags should be properly installed in the direction of below the front

windscreen (D, E, F-bit). Generally according to principles that not blocking the driver's line of sight.

2.13 Installation rules

Aboved is just some installation proposals for non-stoping charging system of intelligent parking, but in other applications (such as the ETC, EVI, TMS, EVR and the other application of this product beyond the vehicle identification), the installation location of the equipment to read and write will be decided to the location of the label on managed objects, such as: electronic non-stoping charging (ETC) project, the reader is directly installed at the top of the door-frame (Top-loading) in the lane, but there is an angel between the antenna plane and the direction of vehicle coming,

the size of this angle will also depend on the height of door-frame and the managed vehicles; when using our equipment tomanage products in logistics, must consider the directions of label on product, and understanding the quantity of products (label) passing some Monitoring point at the same time, at this time often require to set several devices at a monitoring point,to guarantee the integrity recognition of all labels.

2.14 Products accessories packing list

1）One products installation sheet;

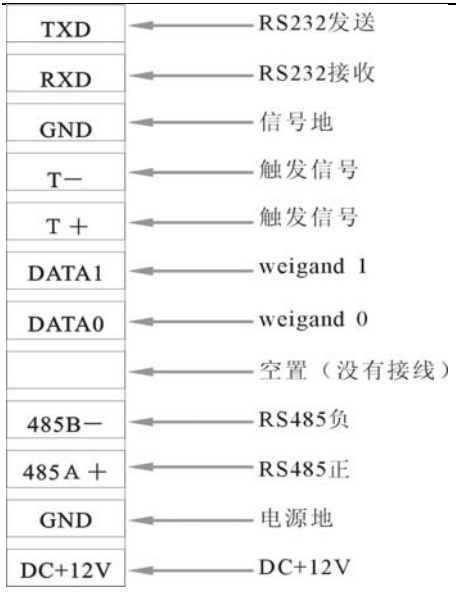
2）One set of DC12V power supply cable and an adapter;

3）One piece RS-232 communications line;

2.15 Instructions of products appearce and interface cable

Products shown as below (the specific shape and color subject to th e products).

Picture 1：Long range Integrated reader



Picture 2：ACM801A Long range Integrated reader wiring diagram

We can see from Figure 2, the main interfaces in long range reader are:

One RS232 data interface:

Controller or a user's computer port

One combination of data signals (Wiegand interface, RS485 interface and triggering signal pin foot combine together)

interface cable row:

Users can choose external access interface according to the difference between the equipment agreement of the output control and the input device,

One DC12.0V power supply interface of socket:

Power supply inputting interface

Chapter Three Usual malfunction and solution

Occurrence	Possible reasons	Solution
When connect to power supply, the readers can not read cards normally	Power supply is not normal	Check AC power supplyand adapters
	There is not electronic label within the reading region	Place the testing label within the reading region
	Electronic tags have been damaged	exchange a testing label
	Polarization direction of	Electronic tag rotating 90 de

	the electronic tag does not match the antenna polarization direction of reader	grees
	the distance between label and reader is too far	Move the label near to the reader
	Reader is set main and minor working mode or triggering working mode	With Drf_Reader_Setup.exe connecting to the reader, and set as timing working mode
Readers and the PC machine can not connect normally	Power supply is not normal	Check AC power supplyand adapters
	Reader and the cables of PC controling side connect bad	Check cable
	the serial port settings of PC side is wrong	Set the correct serial port

Reading distance is near	Power settings of reader is wrong	With Drf_Reader_Setup.exe connect to readers and set the power as 140
	Polarization direction of the electronic tag does not match the polarization direction of reader antenna	Electronic tags rotating 90 degrees
	Electronic tags have been damaged	Exchange a testing label

Chapter Four Notice

ACM series reader must go through the whole system equipment access and settings of all the parameters, electronic tags of the system uses are authorized and issued, the entire radio frequency identification system just truly complete connection, radio frequency identification system can just enter the using stage.

Attention to the use of ACM series reader

1. Generally, ACM series reader through the RS232 data interface connect with the controller or computer, to do data exchanging. As after ACM series reader only received the controlling order of controller, just can do reading or writing operations to the memory cell in the users area on electronic tags, therefore, the use of readers, we provide the SDK development kit, users can do the development of application software. There are two ways in the application and development of ACM series reader.

2. Use the SDK software matching with readers, using API function to operate the reader. The content of using and the allocation of memory of labels, etc. of ACM series reader and specific RS232 (or RS485) communication protocol (including ordering packet format, returning package format, error code agreement, the using of agreement, etc.) of PC machine, SDK software (including components, data definition, the definition of function, etc.), please refer to the relevant content of matching CD-ROM.

3. The working temperature of reader is: -35 ℃ ~ +75 ℃. Therefore, when use the reader in cold areas and season, should pay attention to starting up machine in advance to preheat before 15 minutes when the readers are used formally, to ensure the normal operation of the reader.

4. When the reader are reading and writing labels, will radiate forth microwave power, according to the requirements of U.S. FCC part 15, then the staff should leave the antenna at least more than 30cm.

Attachment Service acceptance

Service notice

1. Product warranty period is one year, unnatural disasters and the damage of human factors, our company grant free warranty in the warranty period,;

2. When users refund the reader for maintenance services, should carefully put reader/writer and its annex full in the original anti-static bubble package. If the original package no longer exists, please choose a packaging box which can play protection role to package.