SUPER-RFID

SP-D300 series long range RF reader

user manual

SP-D300 series reader works at 2.45GHz microwave frequency band, communicating with tags wirelessly, exchanging, collecting and update data for tags automatically, and communicating with computers through serial port or wirelessly.

Performance

1) Identification range is adjustable from 2 to 80 meters
2) Advanced anti-collision techniques, simultaneously identifying up to 200 tags
3) Support identification of fast moving objects with speed up to 200 kilometers
4) Provide omni-directional or oriented antennas
5) Work at globally free 2.45GHz ISM band
6) Communicate with computer through RS232/483/weigand 26 or wirelessly
7) Encrypted and certified to assure data safety, preventive of eavesdropping and intentional decoding
8) Applied channel isolation technology, no interferences between equipments
9) Customized microwave work modes, adjustable transmission power

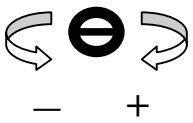
10) Ultra low power consumption, max transmission power is less than 1mW(0dBm)
11) Applied 0.18uM technology to reduce cost
12) Meet harsh industrial environment requirements
13) Anti-jamming capability, tolerance of interfering sources at the scene
14) Applied design techniques of anti-interferences and thunders
15) Easy installation with built in antenna

Software Interface and parameters setup

Connection to PC or controller

SP-D300 reader provide 3 kinds of communication interfaces: RS232, RS485 and weigand26

- With RS232 interface, reader can connect to RS232 of PC directly; if RS485 is used, then a RS485<->RS232 converter is needed (recommend JARA 2102E converter) to connect to PC
- When weigand26 interface is used, reader needs to connect to corresponding weigand controller.

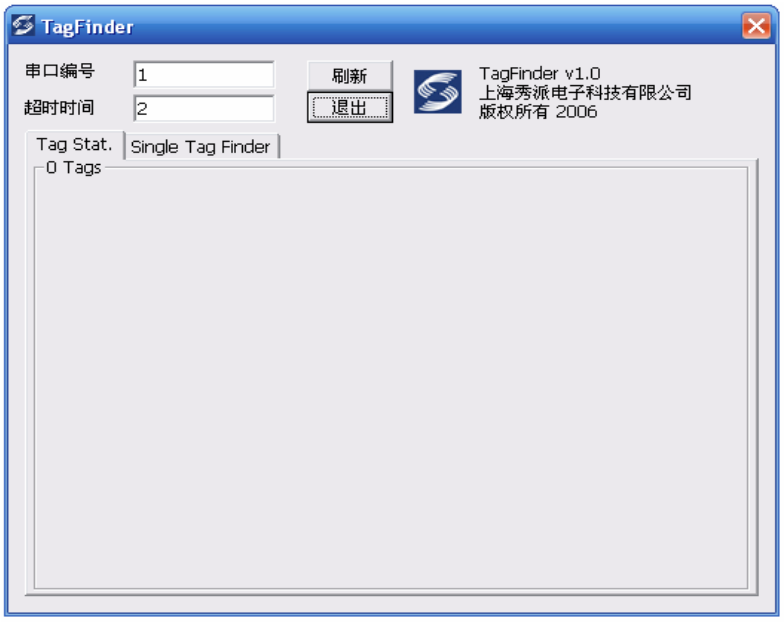


Reader identification range and distance are adjustable with built in attenuator, which is seeable if you take off the cover of reader. It is quite easy to realize the adjustment by turning adjustor clock wisely or anticlockwise.

parameter setup for reader testing software

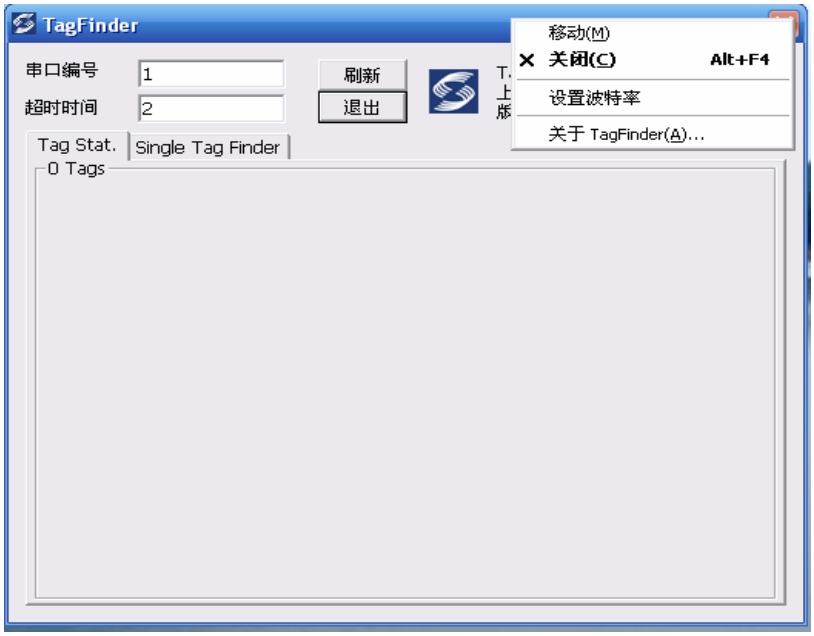
■ testing software 1: TagFinder.exe

Interface is as follows:



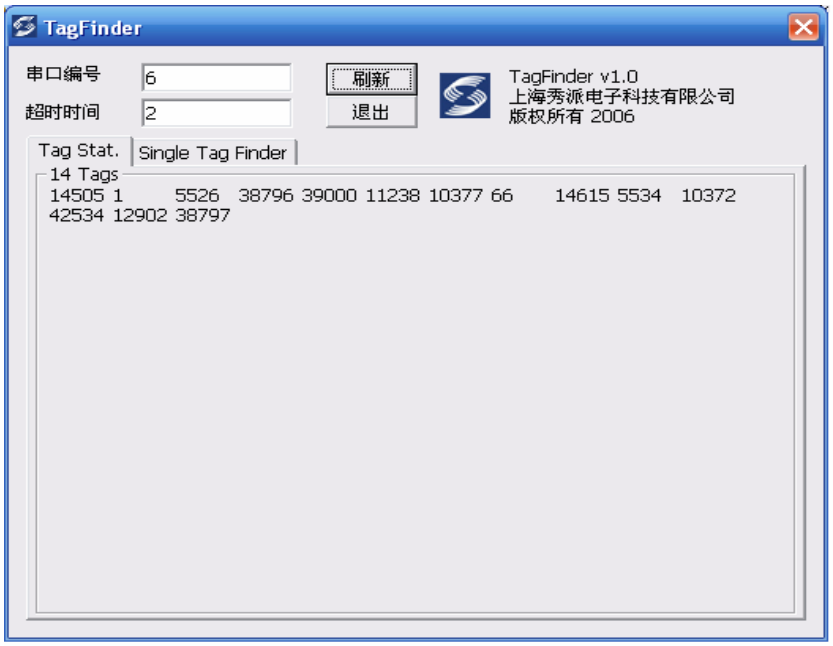
Serial port number is consistent with the port number reader is using. Refresh time can be changed freely. The following shows how to set Baud rate:

Right click the blue bar on the top, choose “set up baud rate” then choose right baud rate.

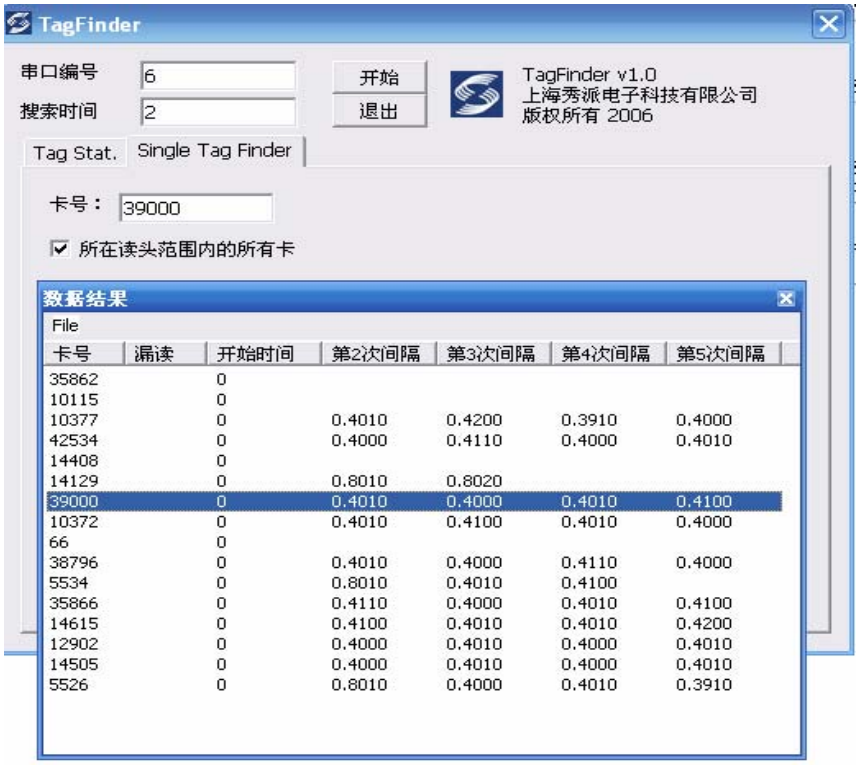


Connect reader to PC, plugging in, making sure parameter settings are correct, and then choose "Tag Stat", clicking "renew". Tags in reader's identification range will be detected and

corresponding ID numbers will be displayed on the screen. Here is illustration:



Data analysis can also be done. Choose “Single Tag Finder”, inputting specific Tag ID number, and then click “start” button. Results will be displayed on the screen (reader renews each tag’s ID number every 400 ms. All ID numbers will be sent to PC)

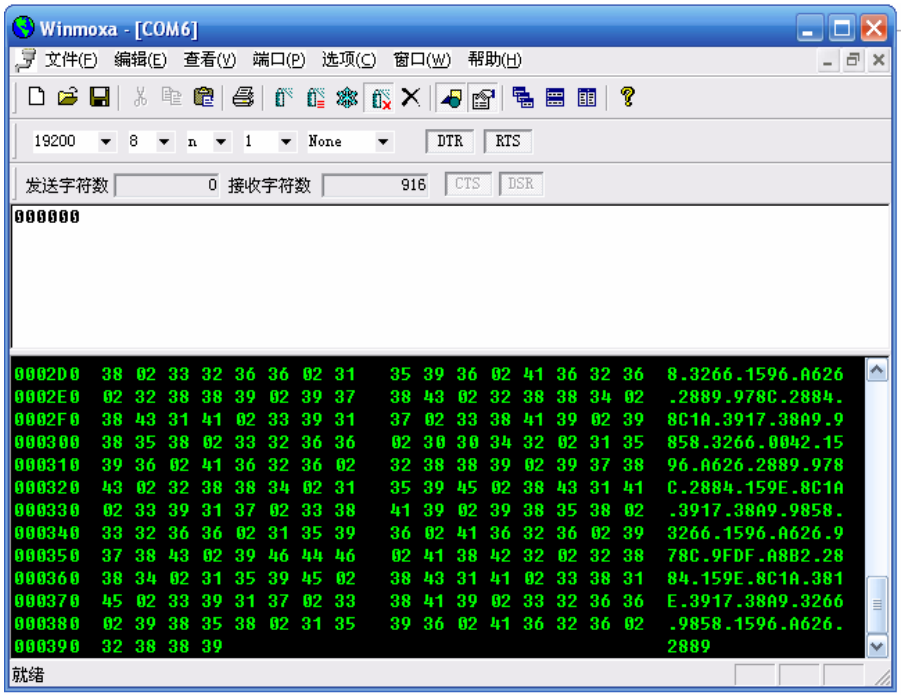


■ Reader testing software 2: rs232a.exe

Interface is as follows:

Choose correct port to finish setup, and then start testing.

For example, 38400bps, 8 data bits, 1 start bit, 1 stop bit, no check bit



The data format of reader transmission and reception:

STX (1BYTE), RFID_ID(4BYTE) totally 5 ASCII characters

STX is 0x02h

RFID_ID include 4 bytes, representing a 2 bytes unsigned integer, such as ID=10811, the hexadecimal expression will be 0x2Ah, 0x3Bh while it can be expressed as 4 bytes ASCII characters: 2, A, 3, B.

Therefore, the data PC received for a tag with ID=10811 is :

Expression in ASCII : STX 2 A 3 B

Expression in hexadecimal: 0x02h 0x32h 0x41h 0x33h 0x42h

Starting with 0X02h, the following 4 bytes represent an ID number.

Warning:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following
measures:
--Reorient or relocate the receiving antenna.
--Increase the separation between the equipment and receiver.
--Connect the equipment into an outlet on a circuit different from that to which the receiver is
connected.
--Consult the dealer or an experienced radio/TV technician for help.
The equipment compliance with FCC radiation exposure limit set forth for uncontrolled
environment

Changes or modifications to this unit not expressly approved by the party responsible for
compliance will void the user's authority to operate the equipment. Any change to the equipment
will void FCC grant.