



**VI-85**

**RFID Integrated Reader**

**Directory of Product  
Information**

- The producer has the right to do revisions for hardware, software and manual of product without statement. And this manual is subject to change without notice.
- Specifications and power of this product is subject to standard in origin. Please being sure that voltage is up to requirement, read and learn about safety precautions, especially in open-air installation of outdoor.

# 1 Product Summarize

VI-85 integrated reader is the latest product developed by us, which can read and write electronic tag or card in accordance with ISO18000-6B/EPC Class1 G2. It is widely used for systems in data collection, vehicle access management, ETC, access management, electronic security, logistic supervision, production automatic management and so on.

## 1.1 Shape And Interface

Shape of VI-85 integrated reader is as follow picture, which adopts ABS shell, it can be installed inside or outside of house, in a good environment of windproof, dust proof and rainproof.



There is an interface at the bottom of VI-85 reader, connection line shows as follows:

Red	Black	Blue	Yellow	Grey	Purple	orange	palm	Dark green	white
+12V	Power GND	Wiegand_Data1	Wiegand_Data0	Triggering Signal Input	485+	485-	Signal GND	232Tx	232Rx

2-1-2

Communication interface in the table of 2-1-2 is of features as follows:

A. RS232 Communication interface:

One of RS232 interfaces (DB9jack: Rxd receive, Txd send, signal) can be connected directly with PC string mouth.

B. Buzzer: inlay buzzer, it sounds whenever reader reads electronic tag.

C. Power supply interface: +12V DC outlet (the red one and black one).

D. I/O interface

◆ One RS485 interface (485+ (purple), 485-(pink) signal difference)-for distant signal transmission.

◆ One Wiegand interface: often use the interface transmission signal in access control system.

Wiegand : use WDATA1-0(yellow one) WDATA1-1(blue)2 lines

Wiegand interface:

◆ Signal supply (light green): one terra line for Wiegand interface and RS232 interface.

◆ One trigger signal access,for input:FIN1(gray), low level trigger

When reader is on the way to activate, if make down-lead connect with low level trigger, then reader begins to read card numbers till high level is recovered.

## 1.2 Performance Index

- ▣ 1▣ Read-write tag:electronic tag in accordance with ISO18000-6B,EPC CLASS1 G2
- ▣ 2▣ Operating frequency:902-928MHz(could be a little difference from various countries and area)
- ▣ 3▣ Way of Working:by FHSS or fixed frequency launch
- ▣ 4▣ Output power: 20-30dbm(could be a little difference from various countries or area)
- ▣ 5▣ Read distance: read distance>500cm, write distance>100cm (antenna and tag dependent)
- ▣ 6▣ Read rate: 32bits/word, 6ms in time,average
- ▣ 7▣ Write rate: 32bits/word, 50ms in time, average
- ▣ 8▣ Power supply: +9v direct current
- ▣ 9▣ power: <5w, in average
- ▣ 10▣ Working temperature: -20°C~+55°C

## 1.3 Function

- ▣ 1▣ Read tag: electronic tag in accordance with ISO18000-6B, EPC CLASS1 GEN2
- ▣ 2▣ Can read EPC tags in different length. (16, 32, 48, 64, 80 or 96)
- ▣ 3▣ Can read EPC Data.
- ▣ 4▣ Can read data from user area.
- ▣ 5▣ Can read data from TID area
- ▣ 6▣ Can visit tag and kill password
- ▣ 7▣ Can write different length EPC code (16, 32, 48, 64, 80 and 96)
- ▣ 8▣ Can write data from user area

- ▣ 9▣ Can revise tag visit and kill code
- ▣ 10▣ PC,TID and user area can write protection
- ▣ 11▣ Password section can write protection
- ▣ 12▣ Can kill tag

## 2 Device Installation

### 2.1 Connection

In system, connection of reader, microwave antenna, electronic tag and controller (or PC machine) shows as follows:

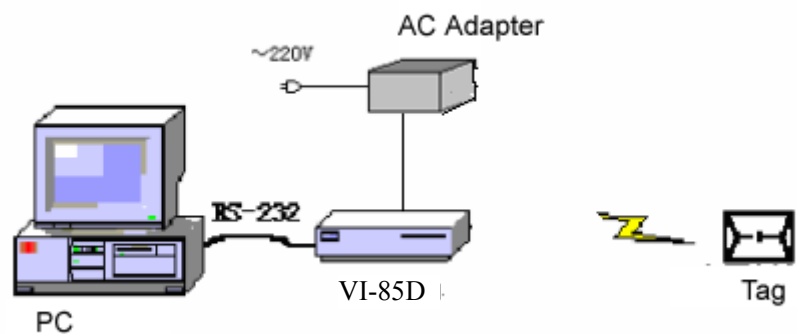


Figure 3-1-1 typical connection about the relevant equipments

### 2.2 Connector And Controller

VI-85 reader can connect with controller through any interface from Wiegand, RS485 or RS232

#### (1) Wiegand Interface

Under Wiegand port communications, need to connect 3 pins (Data0 (yellow), Data1 (blue), GND (lt. green)) on reader's line bank, with the relevant 3 pins on application system control. Reader Wiegand port just sends data unilaterally. In projects, the connection cable length for Wiegand port should be no more than 30 meters for Wiegand port.

#### (2) RS485 RS485 interface

Under RS485 port communications, need to connect 2 pins (RS485+ (purple), RS485-(orange)) on reader's line bank, with the relevant 2 pins on application system control. Also, through the converter can also connect with the PC serial port. In projects, the connection cable length

for RS485 port should be less than 1000 meters.

### (3) RS232 interface

RS232 interface can connect with PC directly, by matched cable, length of RS232 interface connection line should be less than 10meters, drawing shows as 2-3

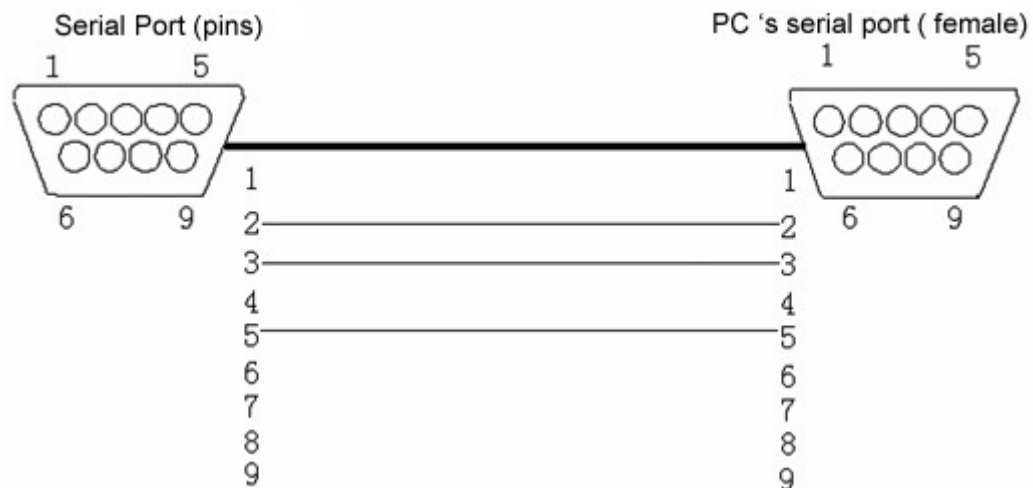


Figure 3-2-2 Reader's RS232 is connected with PC

## 2.3 Connection Power Supply

VI-85 reader adopts +9V/3A direct current power supply, we can supply you reader with required alternating and current converter, the way to connect power is as follows:

- (1) Check and confirm if voltage of alternating power supply and operating frequency is in accordance with AC 100-240V
- (2) Make DC output pin of power converter insert into +9V direct current power interface of reader.
- (3) Make 220V alternating power input line of converter insert or connect with line of alternating power supply.
- (4) Indicator light of power supply in reader should be lightened, it says power supply inputs in a good way.

## 2.4 Device Adjustment

Key of device adjustment is: adjust height, direction angle, ubiquity, to make reader can read electronic tag in the expected range.

**( 1 )** Open reader power supply, set reader to be mode of continuous working, close parameter setting procedure, and cut off the connection with PC

**( 2 )** Close reader power supply first, and then open, reader will automatically turn into state of continuous working.

(3) As material of identified object and required tag is different, so electronic tag should be stuck into object with same material as identified one, traverses object in the expected range of tag is to read. If reader can read electronic tag correctly, then inlay buzzer tweets and green LED blinks.

**( 3 )** Adjust height and angle of antenna; make reading range at the best.

**Note: reader only radiates microwave power when reading tag, then adjuster should keep a distance of 30cm, and then it can meet American FCC requirements.**

## 2.5 Tag Place

In work process of RFID, tag place is a usual job, some notes are as follows:

(1) Adopts glue water recommended by factory

(2) If labeled in the surface of metal, professional glue is recommended.

(3) Labeled place has to be field tested to make sure read best.

**Note: Our Company offers 2 electronic tags to customers, in ISO18000-6B standard**



- (1) Air medium, can be held to use, also can be instead by our block set, insert card into it directly.
- (2) Glass medium, card should be stuck in glass. (non water-solubility is required)

### 3 Usual Faults

Table 4-1 usual faults and solutions for reader

Fault Phenomena	Possible Reason	Solution
can not read card	antenna is not well connected	Check antenna connection details
	beyond to reading area of module	make card close to module antenna
	antenna is broken	Change new antenna
	Parameter of RF Power is too low	Renew parameter
	tag is broken	Test in other tag
	reader is broken	Contact technical
Can not be connected with reader	no power	Check outlet and adapter
	Com ties up or broken	Check interface through software and test if it communicates
	baud rate is not set in accordance	Set it to be in accordance by software
	reader is broken	Contact technician
Reading distance is too near	antenna is not well connected	Check details of antenna connection
	Parameter value of RF Power is too low	renew factory parameter
	tag is not in accordance with antenna polarization	revolve tag in 90degree
	reader is broken	Contact technician
	tag is broken	change new tag

## 4 After-Sales Service

### Customer support

If you have doubts about instruction and can not get solutions from our website, please contact our customers' service in ASKA. If your device has to be repaired, please contact us for service information, delivery instruction and maintenance cost excludes from after service before it is sent out

### Service

If device needs to be diagnosed or other service, please contact our customers' service in ASKA. Please don't send it out before you contact us. If your device is under guarantee, please prepare receipt of purchasing.

Please do as follows before you contact us:

- A. Read introduction
- B. Prepare your machine
  - model
  - serial number
  - receipt of purchasing
- C. Prepare your machine - customer service representative maybe ask you to operate machine.

- D. Prepare your questions, detailed problem description can help customer service representative solve your problem at the earliest.

## Guarantee

### One year guarantee for hardware

### Scope of warranty

Guarantee above excludes from faults caused as follows:

Misapplication, modification without authorization, open the hardware, operates or stores up this product in an improper environment, damages during transportation, improper maintain, or caused by not using software, parts, media, article, expendable from the producer or project not for this product.



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