

CN56X0B-X-XX Access Control Door Reader

User Manual

CIVINTEC[®]

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WARNING

- This manual is a necessary part of this product, please read carefully
- Keep a record of this text , it may be used for further repair.
- This machine is only for recommended uses, do not use for others.
- Damaged by improper uses or other uses, manufacturer is not responsible.

Matters Need Attention

- Not allowed by the manufacturer or failure to manufacturer's specifications, any changes to the machine parts and range of use may cause the damage in the direct or indirect
- Don't make machine at extreme temperature and humidity in the environment; Avoid placing it in the heating equipment, faucet, a humidifier or the fireplace.
- Should make the machine avoid contact with a large dust, ammonia, alcohol, diluents or spray type adhesives etc
- Should make machine avoid collisions, fall, etc., which may damage the machine to happen.
- Please pay special attention to all labels pasted on the machine.
- Should avoid changing the machine's parts, procedures and other abnormal operation
- Note static electricity protective

Version History

The table below contains the history of changes made to the present document.

Version	Date	<i>Document Version History</i>
V1.0	19-Feb-2013	Original Version
V1.1	28-Feb-2013	Release Version
V1.2	13-Dec-2013	Release Version

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1 Instruction

1.1 Instruction

Optimized to make physical access more secure and smart, CN56X0B access readers introduce multi-technique to work with all main 13.56Mhz smart cards as MIFARE® DESFire® EV1, MIFARE Plus® and Sony Felica to enhance security through high encryption and multi-authentication, and ISO18092 NFC for mobile phone access solution.

1.2 Functions and Features

Functions/ Features	CN56X0B
●High Intelligence, powerful	YES
●Selective card polling capability(Useful when several cards are presented)	YES
●Built-in anti-collision(at least one card is detected when several cards are presented)	YES
●RS232 / RS485 serial interface(Baudrate:9600-115200)	YES
●Support TCP/IP(UDP) communication	YES
●High speed of ISO14443 up to 424kbps	YES
●User controllable bio-color LED, Buzzer	YES
●Backward compatible with all existing versions of CiVinTec's 13.56MHz products	YES
●Auto answer mode: permanent reading and sending the ID number Excellent and compact design, can be placed on the metal surface	YES
●Support high level command of MIFARE Plus®, MIFARE® DESFire® EV1	YES

1.3 Scope of Suitable Models

This user manual is made for the following list of products: **CN56X0BS-X-XX series**.

	CN5600BS	CN5600B	CN5610B	CN5620B	CN5630B	CN5650B
MIFARE®	•	•	•	•	•	•
MIFARE Plus®			•		•	•
MIFARE® DESFire® EV1				•	•	•
NFC						•
Felica						•

CN5600B – R/W MIFARE® secure sector

CN5600BS – R/O MIFARE® UID

1.4 Applications

- 1) Access Control
- 2) Personal Identification
- 3) E-payment
- 4) Public Transportation
- 5) Loyalty

2 Machine Structure

2.1 CN56X0B-X-XX for contactless card interface

CN56X0B-X-XX image: (Front View)



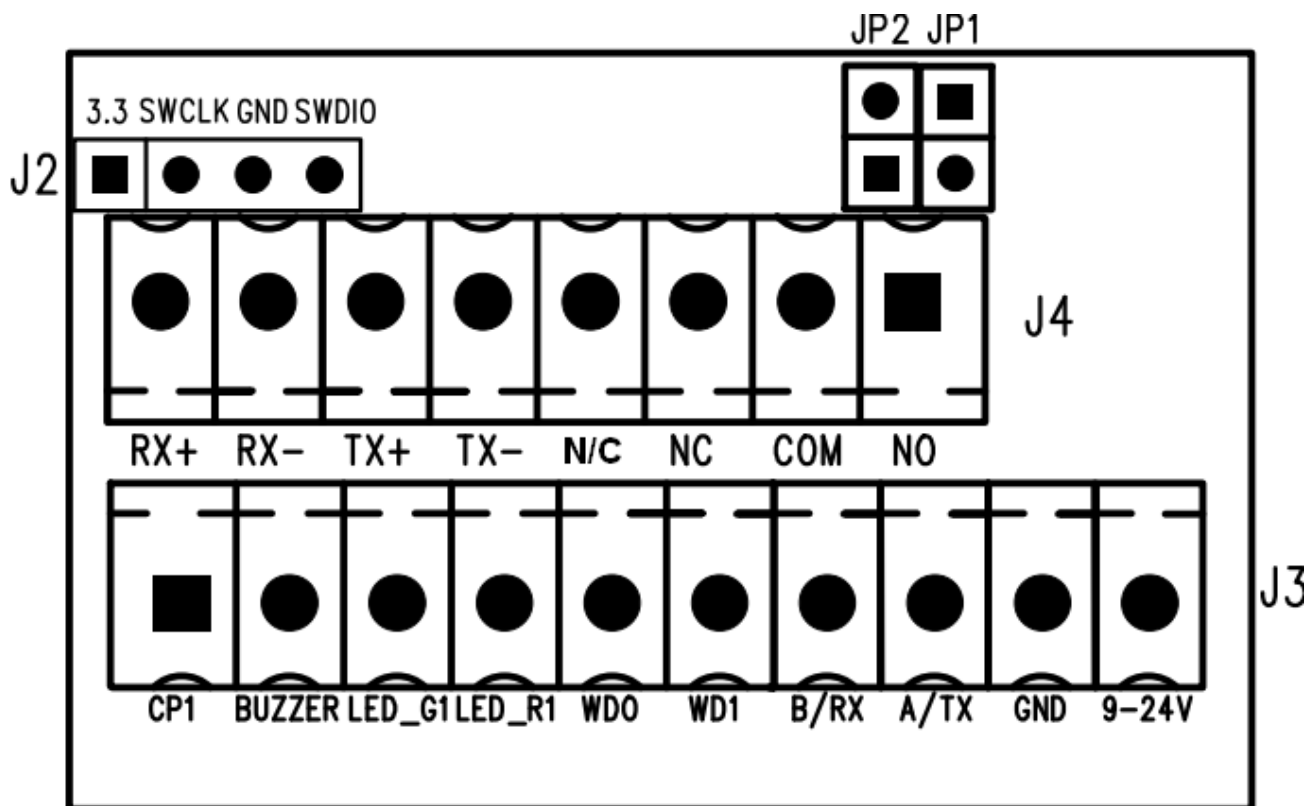
CN56X0B-T-0C
CN56X0B-2-0C
CN56X0B-4-0C



CN56X0B-T-1C
CN56X0B-2-1C
CN56X0B-4-1C

Model	CN56X0B-X-XX			
	CN5610B	CN5620B	CN5630B	CN5650B
Standard	ISO 14443A/B, MIFARE®, NFC Forum Specifications			
Readable cards	<u>Read/Write :</u> MIFARE® 1K, MIFARE® 4K MIFARE Ultralight®, MIFARE Plus®	<u>Read/Write :</u> MIFARE® 1K, MIFARE® 4K MIFARE Ultralight®, MIFARE® DESFire® EV1 (2K, 4K,8K)	<u>Read/Write :</u> MIFARE® 1K, MIFARE® 4K MIFARE Ultralight®, MIFARE Plus® MIFARE® DESFire® EV1 (2K, 4K, 8K)	<u>Read/Write :</u> MIFARE® 1K, MIFARE® 4K MIFARE Ultralight®, MIFARE Plus® MIFARE® DESFire® EV1 (2K, 4K, 8K) NFC(type1-type4) Felica
Operate Frequency	13.56 MHz			
Power Supply	9-24VDC <150mA			
Interface	<ul style="list-style-type: none"> ● RS232, Wiegand (26,34,42,50,58)/Clock & Data 8,10/ABA1,2 ● RS485 Wiegand (26,34,42,50,58)/Clock & Data 8,10/ABA1,2 ● TCP/IP Wiegand (26,34,42,50,58)/Clock & Data 8,10/ABA1,2 			
Reading output format	Wiegand26/34/42/50/58, Clock & Data 8/10 (3 byte, 5byte, HEX, DEC) , ABA1/2			
Keypad output format	4bit, 8bit, Wiegand26			
Keypad	3*4 keypad with backlight			
Indicators	Blo-color LED and Buzzer controlled by three-wires			
Connection	connector			
Reading Distance	50 - 100mm (depending on antenna, transponder)			
Writing Distance	30 - 70mm (depending on antenna, transponder)			
Operating Temperature	-20°C ~ +60°C / -4°F ~ +160°F			
Storage Temperature	-20°C ~ +60°C / -4°F ~ +160°F			
Operating Humidity	0 ~ 95% relative humidity non-condensing			
Housing Material	ABS			
Protection Class	IP65, electric epoxy potted for harsh environment			

3 Connector Pin definition



3.1 CN56X0B-X-XX Connector

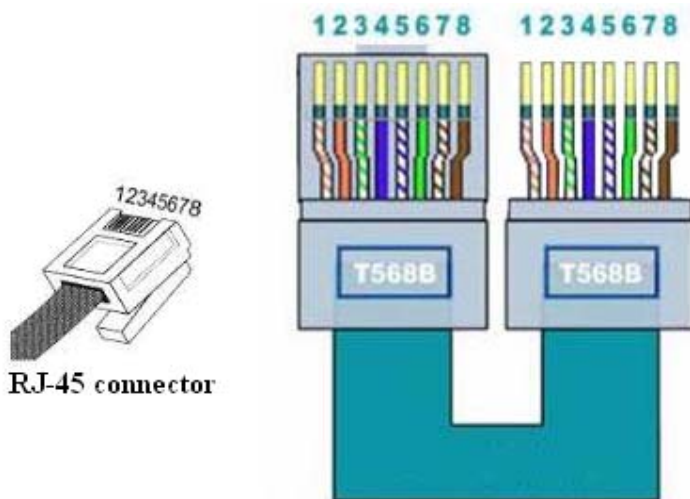
J3:

9-24V	DC Power input, DC(9~24V)
GND	Ground
A/TX	Connect to RS485A of RS485 network and Connect to RS232 TX of PC
B/RX	Connect to RS485B of RS485 network and Connect to RS232 RX of PC
WD1	Data1 signal (connect an external wiegand reader Data1)
WD0	Data0 signal (connect an external wiegand reader Data0)
LED_R1	External control Red LED, low level detection
LED_G1	External control Green LED, low level detection
Buzzer	External control Buzzer, low level detection
CP1	No connect

J4:

NO	normally open of lock relay
COM	common port of lock relay
NC	normally close of lock relay
N/C	No connect
TX-	Tranceive Data-; connect to green wire of network cable(pin 6).
TX+	Tranceive Data+; connect to white/green wire of network cable(pin 3).

- RX-** Receive Data-; connect to orange wire of network cable(pin 2).
RX+ Receive Data+; connect to white/orange wire of network cable(pin 1)

**J2:**

- 3.3** DC Power input, DC3.3V
SWCKL Single bi-directional data pin
GND Ground
SWDIO Clock single to target CPU

JP1: This jumper is opening in normal work. When this jumper is shorting before power on, Main unit go to download user program state (**only apply to RS232 interface**)

JP2: This jumper is opening in normal work. When this jumper is shorting before power on, Main unit go to download user program state(**apply to RS232 interface and RS485 interface**)

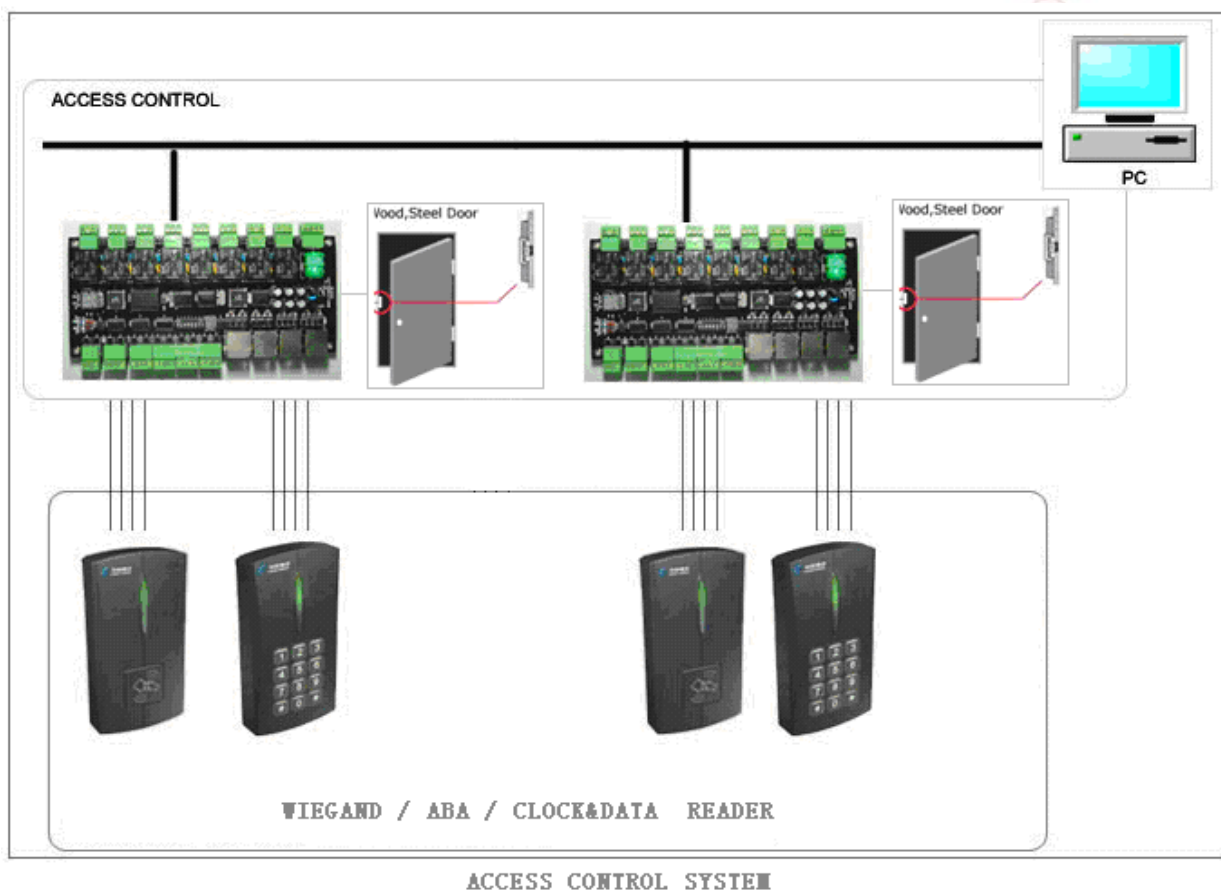
4 Connection

Attention:

1. Please make sure that CN56X0B-X-XX has the same interface format as controller you are using. If there is need to change interface format, please refer to “6.Reader Configuration”
2. When connecting to controller, please make sure that controller and reader have common ground.

4.1 Wiegand/ABA /Clock&Data interface

- 1) Power: VCC connect to VCC(+) of controller, and GND connect to GND(-) of controller;
- 2) Communication: D1/Clock connect to D1/Clock of controller, D0/Data connect to D0/Data of controller;



4.2 RS485 interface

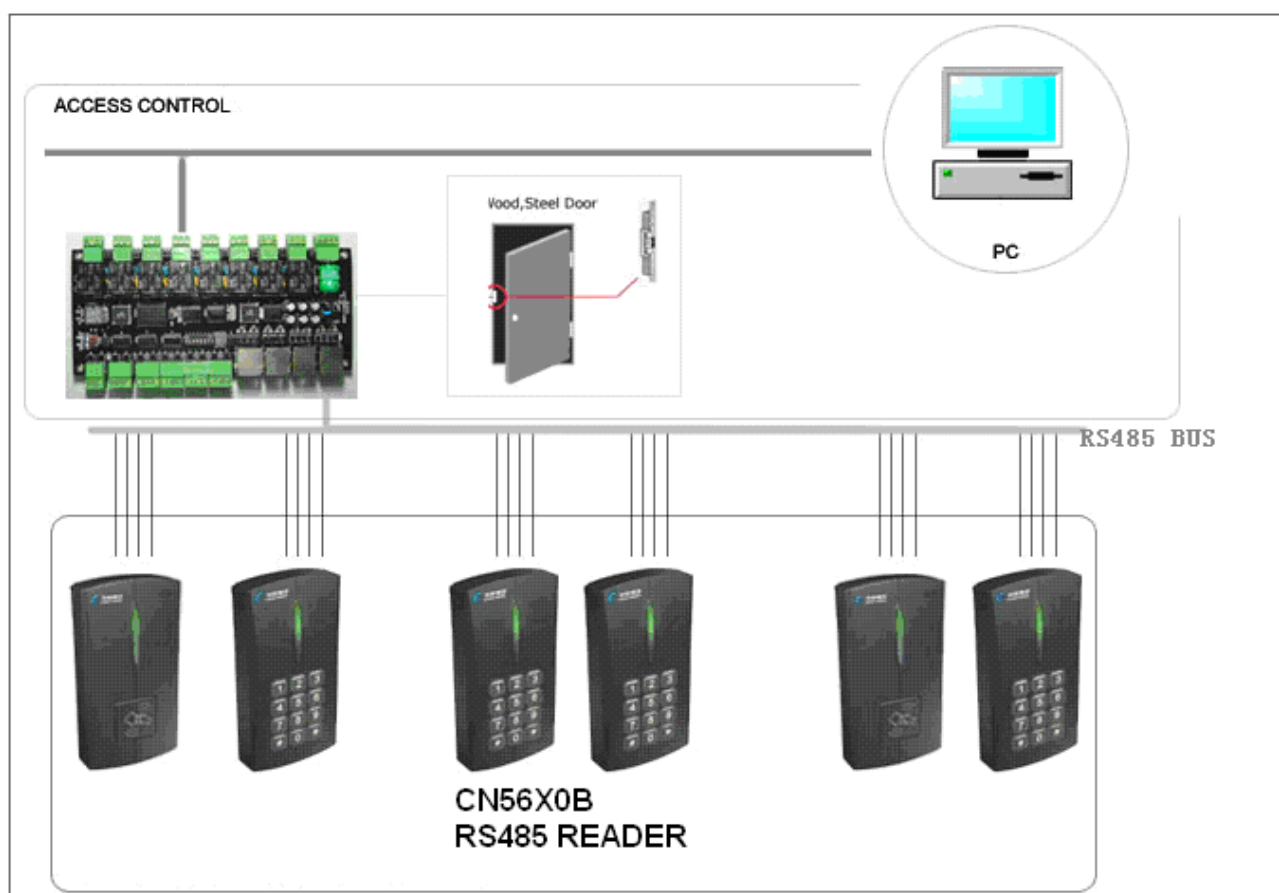
- 1) Power: VCC(+), GND(-) connected with external adapter (9-24VDC);
- 2) RS485 communication:

Connect to RS485 Controller:

CN56X0B communication port A connected to the RS485 BUS A, and CN56X0B communication port B connected to the RS485 BUS B. then RS485 BUS A connected with the controller's A communication port, and RS485 BUS B connected with the controller's B communication port:

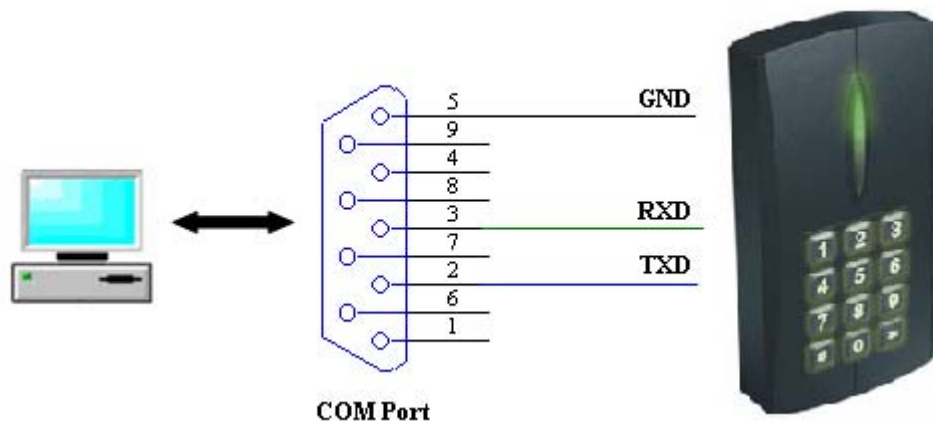
Note: 1) Please refer to the file "Configuration Guidance" to set device address.

- 2) Please make sure that the controller will use the same communication protocol as CN56X0B-X-XX. Please refer to the file "Communication Protocol".



4.3 RS232 interface

- 1) Power: VCC(+), GND(-)connected with external adapter (9-24VDC);
- 2) RS232 communication: TXD connected to COM port PIN2, RXD connected to COM port PIN3, GND connected to COM port PIN5(See the following figure):



5 Reference for Interface format

5.1 Wiegand format

Wiegand26 bits Output format

- ◇ 26 bits Wiegand output
- ◇ Left even parity bit (MSB) + 24 bits card serial number + right odd parity bit(LSB)

Wiegand34 bits Output format

- ◇ 34 bits Wiegand output
- ◇ Left even parity bit (MSB) +32 bits card serial number + right odd parity bit(LSB)

Wiegand42 bits Output format

- ◇ 42 bits Wiegand output
- ◇ Left even parity bit (MSB) +40 bits card serial number + right odd parity bit(LSB)

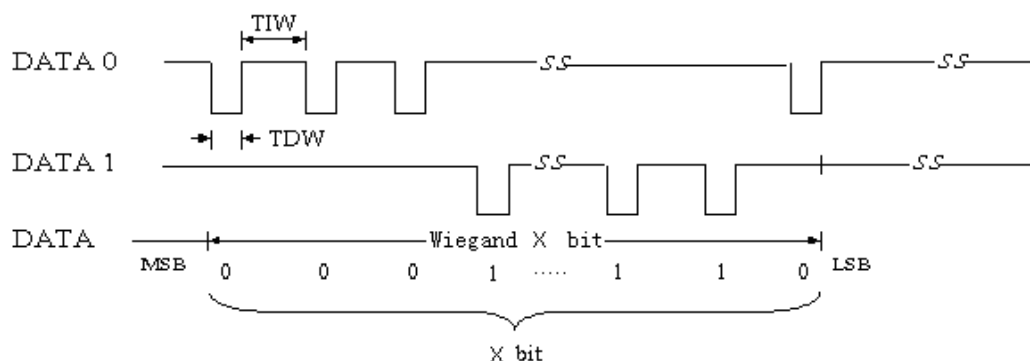
Wiegand 50 bits Output format

- ◇ 50 bits Wiegand output
- ◇ Left even parity bit (MSB) +48 bits card serial number + right odd parity bit(LSB)

Wiegand 58 bits Output format

- ◇ 58 bits Wiegand output
- ◇ Left even parity bit (MSB) +56 bits card serial number + right odd parity bit(LSB)

5.2 Wiegand Frame



SYMBOL	Parameter	Limits Min.	Limits Max.	Type	UNITS
TDW	Data Pulse width time	20	100	50	uS
TIW	Data Pulse interval time	0.2	4	2	mS

◇ 1 is represented by a 50 usec low pulse on DATA1

◇ 0 is represented by a 50 usec low pulse on DATA0

5.3 ABA Track 1 output format

5.3.1 Data

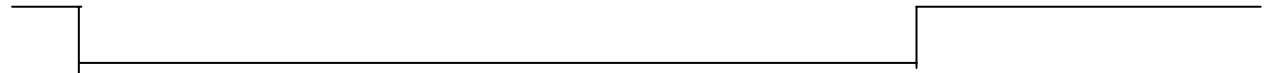
- 1) Starting Bits: Fifty "0"
- 2) Starting character: B (11010, Lower bit ahead, sort by 1248P)
- 3) Card ID: 0000000000-9999999999 (10 bits decimal number)
- 4) End character: F (11111, lower bit ahead, sort by 1248P)
- 5) LRC vertical redundant checking sum (BCC)
- 6) Ending Bits: Fifty "0"
- 7) Odd check apply on each character
- 8) All data output: 0 is high level output, 1 is low level output

5.3.2 Frame format

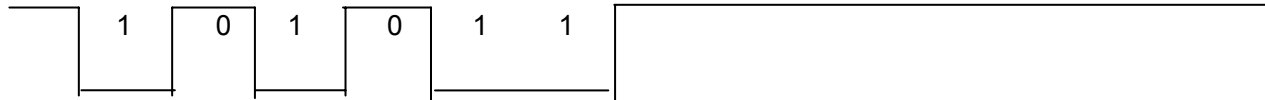
Starting bits	Starting character	Card info	Ending character	BCC	Ending Bits
fifty "0"	B	10BYTES	F	5BITS	fifty "0"

When sending characters, lower bit is in front of high bit

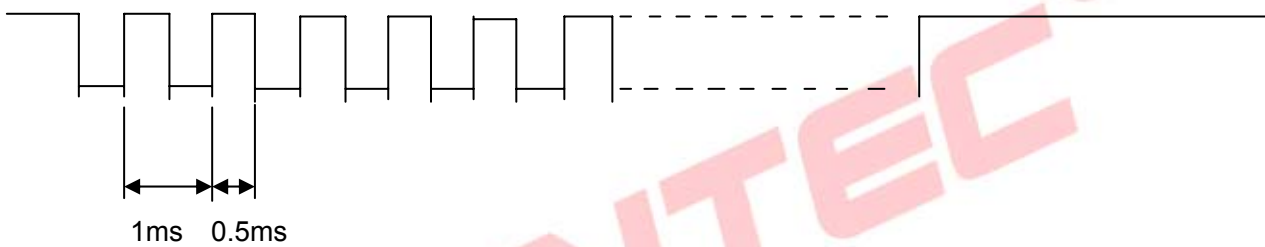
CARD IN



/DATA



CLOCK



5.4 ABA Tack 2 Output format

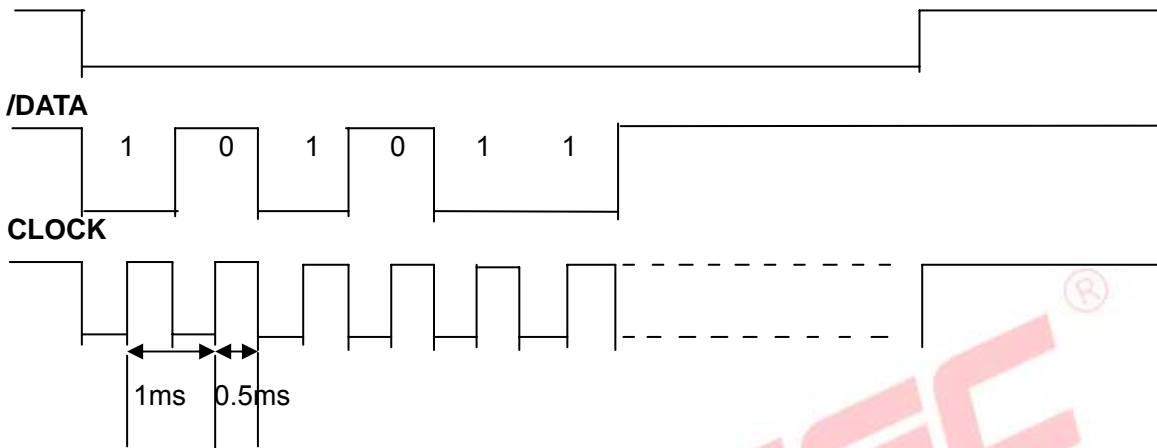
5.4.1 Data

- 1) Starting Bits: ten "0"
- 2) Starting character: B (11010, Lower bit ahead, sort by 1248P)
- 3) Card ID: 0000000000-9999999999 (10 bits decimal number)
- 4) End character: F (11111, lower bit ahead, sort by 1248P)
- 5) LRC portrait redundant checking sum (BCC)
- 6) Ending Bits: Five "0"
- 7) Odd check apply on each character
- 8) All data output: 0 is high level output, 1 is low level output

5.4.2 Frame format

Starting Bits	Starting character	Card info	End character	BCC	Ending Bits
ten "0"	B	10BYTES	F	5BITS	five "0"

CARD IN



5.4.3 LRC portrait redundant checking sum enable method

LRC character apply following method to calculate: exclude Odd check bit, regulate each bit in LRC character, it will ensure sum of the bits which is going to be encode at response position is even number.

Magstripe data:	B0	B1	B2	B3	P(odd check bit)
Starting character:	1	1	0	1	0
First card character:	1	0	0	0	0
Second card character:	0	1	0	0	0
Third card character:	1	1	0	0	1
.....
Ending character:	1	1	1	1	1
LRC character:	0	0	1	0	0

5.5 Clock &Data (Europe) format

5.5.1 Description

The protocol provides a 3-wire Clock and Data (Europe) interface with a 10 digit BCD or 8 digit BCD Tag Code. The three wires are defined as Presence, Clock and Data. The Presence line will indicate the presence of a Tag. The Clock line is used to clock the data on the Data line.

5.5.2 Protocol

A 10-Digit BCD number transmits the 32 bit Code with a Start and Stop sentinel and Longitudinal Redundancy Check (LRC) checksum defined as follows:

BCD 0	BCD 1 to 10	BCD 11	BCD 12
Start	32 bit code as BCD	Stop	LRC Checksum
B (Hexadecimal)	NNNNNNNNNN	F (Hexadecimal)	X

Where N = 0 to 9

Each BCD Digit has an odd-parity bit appended:

Bit 0	Bit 1	Bit 2	Bit 3	Bit 4
LSB of BCD			MSB of BCD	Odd Parity
1	0	0	1	1

The LRC checksum is calculated by XOR the BCD Digits including the Start and Stop Sentinel but excluding the parity bits. The parity of the LRC checksum is also set to odd-parity, For example:

BCD	Binary	Parity
B	1011	0
5	0101	1
7	0111	0
0	0000	1
1	0001	0
9	1001	1
3	0011	1
5	0101	1
1	0001	0
F	1111	1
LRC	1001	1

The 24 bit Code is transmitted by a 8 Digit BCD number with a Start and Stop sentinel and Longitudinal Redundancy Check (LRC) checksum defined as follows:

BCD 0	BCD 1 to 8	BCD 9	BCD 10
Start	24 bit code as BCD	Stop	LRC Checksum
B (Hexadecimal)	NNNNNNNN	F (Hexadecimal)	X

Where N – 0 to 9

Each BCD Digit is appended with an odd-parity bit as defined above. The LRC checksum is calculated as above.

The 13-Digit or 11-Digit BCD number is transmitted serially on the Data signal line starting with BCD-0's LSB. If a bit is equal to a One the Data signal line is at GND. If the bit is equal to a Zero

the Data signal line is at Vcc.

The timing of the Clock and Data (Europe) protocol is shown in Figure 2.

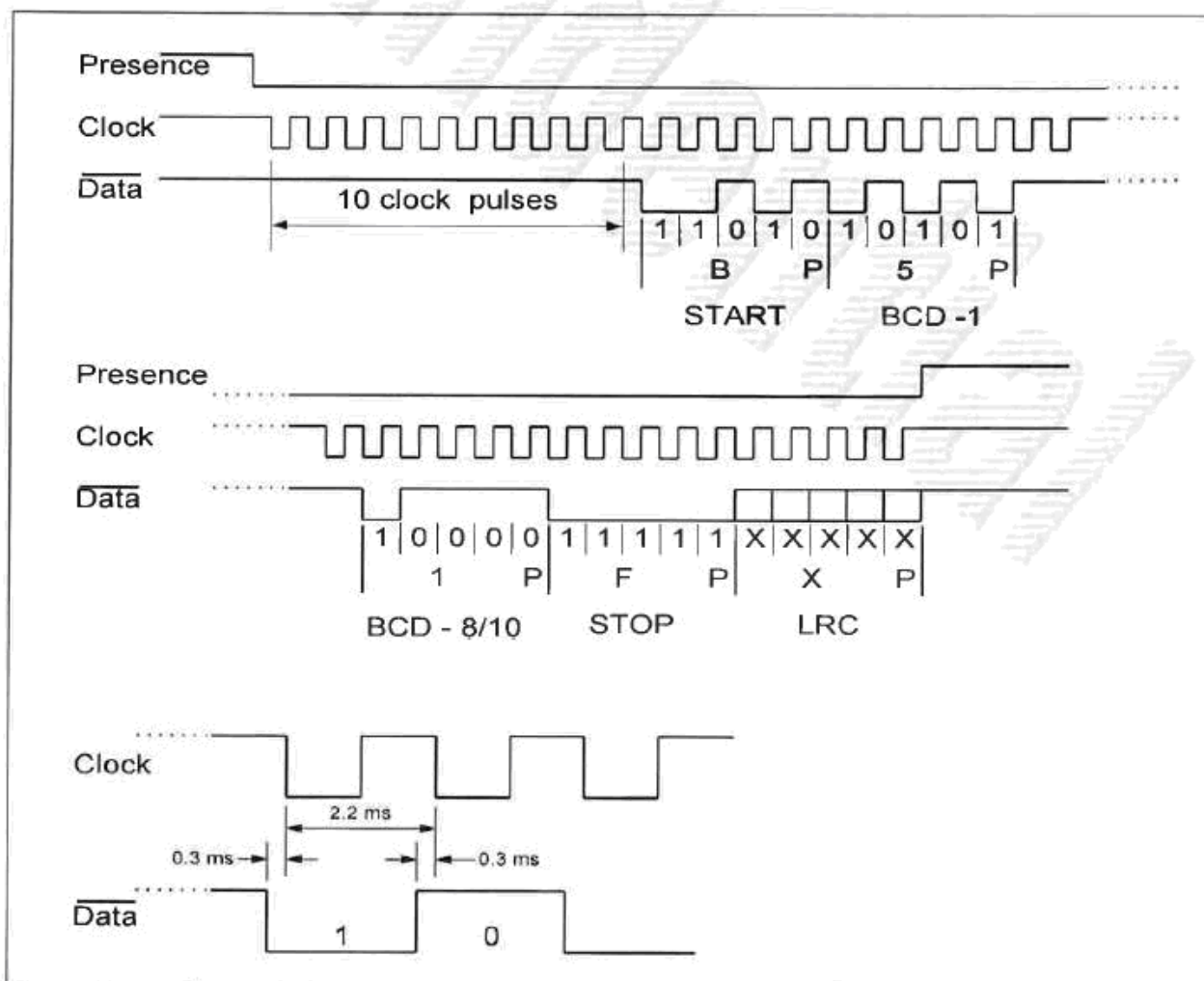


Figure 2

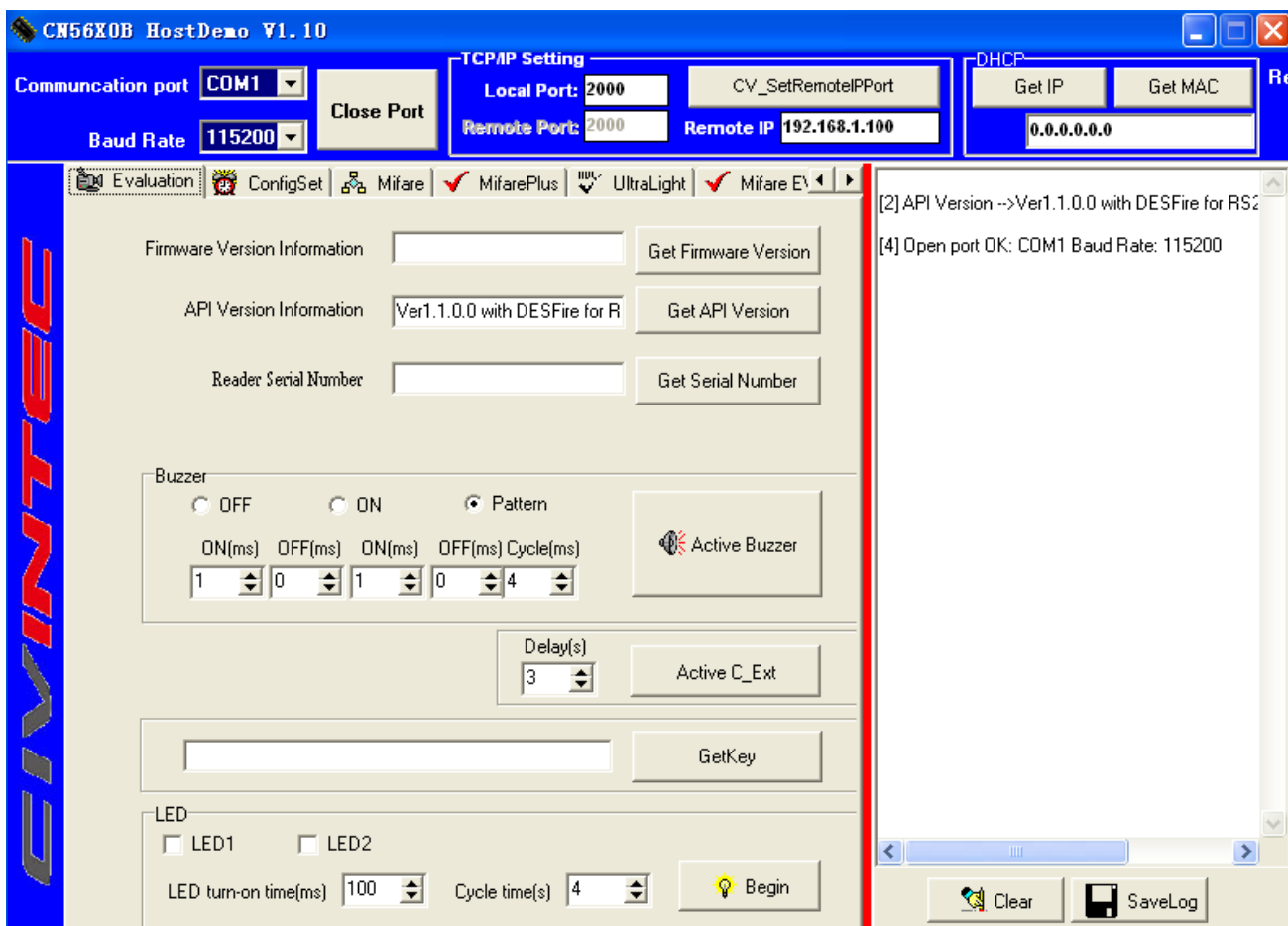
6 Reader Configuration

6.1 System Application Development

CivinTec offers API function easy to use further application development, which the user can directly call API function in program. The user will be recommended to read that explanation documentation "CNReader SDK" carefully before starting the system development.

6.2 Reader Configuration

Host Demo overview



6.2.1 Communication port

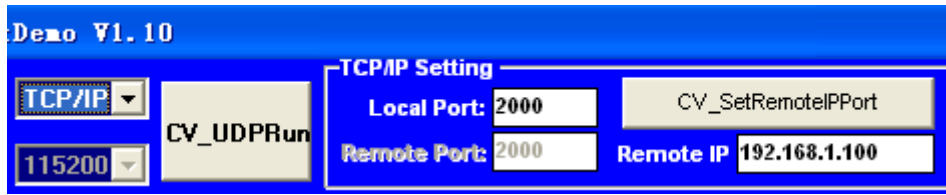
The CN56X0X-XX support RS232 and TCP/IP communication type.

1. CN56X0X-XX Communication RS232 port setting



- ”
- Select the model from “Select Device”
- Select “COM?” from “Communication Type”
- Click “Open Port ” button.
- Baud Rate setting: The function is used to set the speed of serial port communication, the default setting is 115200bps.

2. CN56X0X-XX Communication TCP/IP port setting



- Select the model from “Select Device”
- Select “TCP/IP” from “Communication Type”
- Remote IP: key in “192.168.1.100”
- Click “CV_UDPRun ” button

6.2.2 Reader Address

The factory default value “0”is set to system broadcast address.

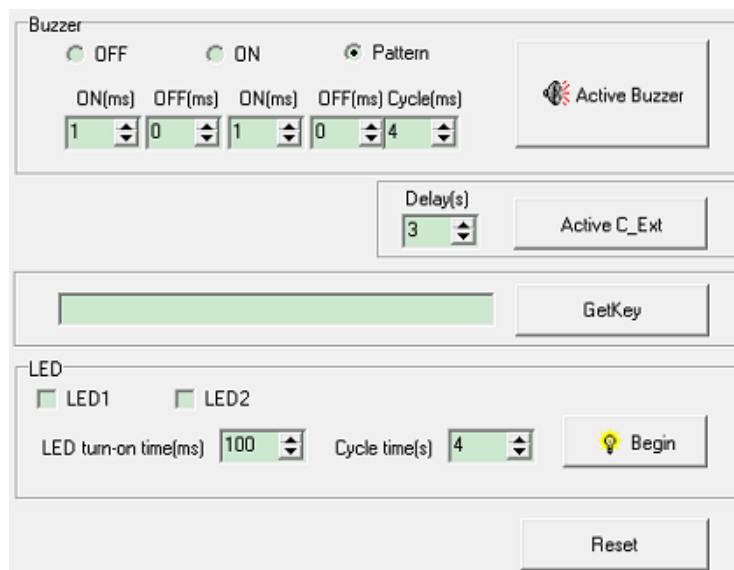


6.2.3 LED Indicator

The LEDs are used to show the status of power and contactless card. The Red LED is used to show Power status. The Green LED is used to show contactless card.

6.2.4 Buzzer Indicator

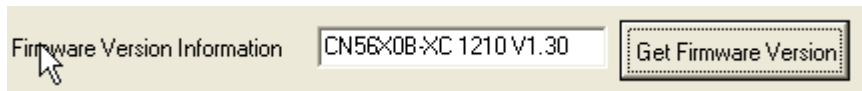
Buzzer is used to show the contactless card



Click “Active Buzzer” button, buzzer will beep.

6.2.5 Get Firmware Version

Query Firmware Version.



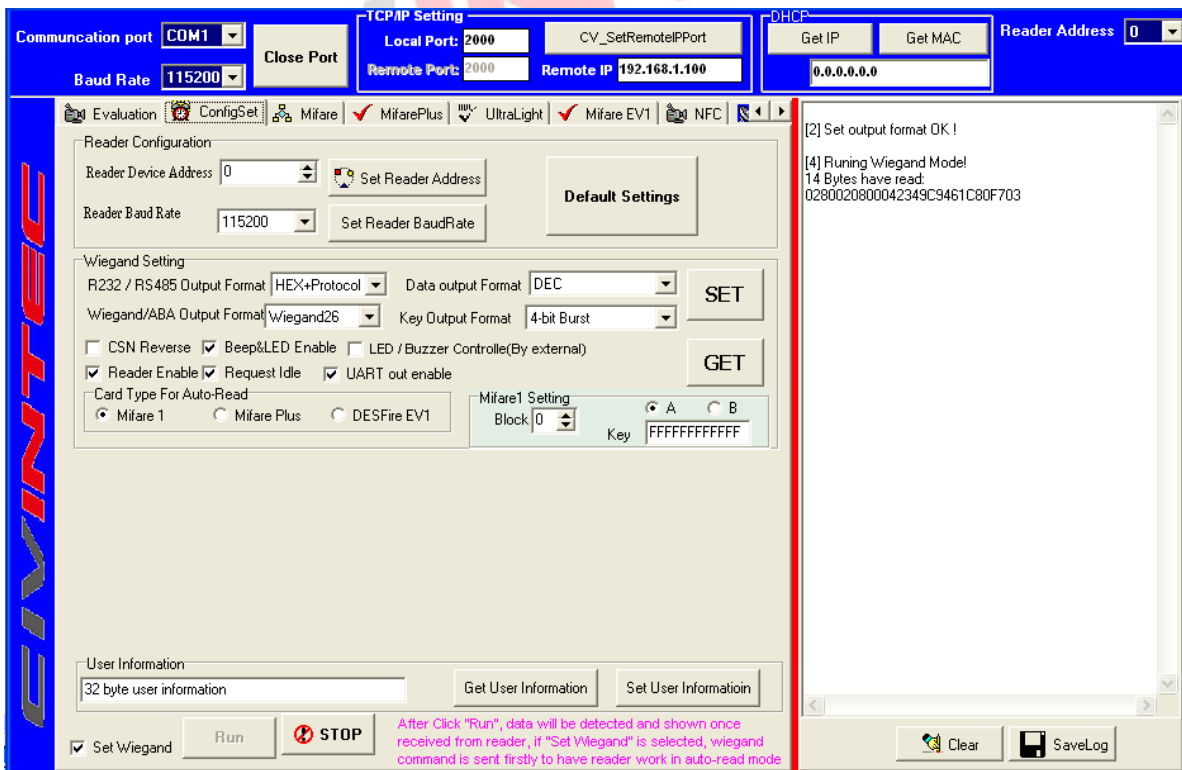
6.2.6 Get Serial Number

The serial number is a unique number which preset by manufacture.



6.2.7 ConfigSet

Users can realize the auto-read function by using ConfigSet, it supports MIFARE®, MIFARE Plus® and MIFARE® DESFire® EV1 total three kinds of cards:



- Keep the default setting, select “Set Wiegand” button (as red circle shown)
- Select “SET”, “Run” button

•Scan MIFARE®, MIFARE Plus® or MIFARE® DESFire® EV1 cards , the UID of the card will be read out automatically, and will be shown in the right window.

6.2.8 LED&Buzzer Controller(By external)

- 1) By default, Red LED, Green LED and Buzzer are controlled inside, in this case, Red LED will be light (until power off) and Buzzer will be beep (one time) when reader is powered on, also, once read card successfully, the buzzer will be beep (one time), and green LED will be light (one time).
- 2) If “LED&Buzzer Controller(By external)” is checked, Red LED, Green LED and Buzzer are controlled by three external wires, purple wire controls buzzer, yellow wire controls green LED and orange wire controls red LED, in this case, once wire (purple, yellow or orange) connect to low level (GND), features will be enable (Red/Green LED lights, or Buzzer beeps) they will continues until wire (purple, yellow or orange) is disconnect from GND

6.3 CN56X0B-X-XX output 7bytes with Wiegand 56

The length of Wiegand56 output

- 1) CN56X0B-X-XX can completely output 7bytes in Wiegand56 mode without parity bit
- 2) For Wiegand58, it output 7bytes with two parity bit.

6.4 Format for Wiegand58, Wiegand26, Wiegand32, Wiegand 32e, Wiegand34, Wiegand40, Wiegand42, Wiegand50, Wiegand56

6.4.1 Wiegand58 Format

- 1) MSB is even parity bit, LSB is odd parity bit.
- 2) The bits for calculating even parity are within the first 28 bits, but don't use the bits from 21 to 24. Actually it uses 24 bits for even parity.
- 3) The bits for calculating odd parity are within the last 28 bits, but don't use the last 8 bits within these 28 bits. Actually it uses 20 bits for odd parity.

For example:

Data Hex: 00 00 00 89 D4 1B 81

Data Binary:00000000 00000000 00000000 10001001 11010100 00011011 10000001

MSB: 1 from 00000000 00000000 00000000 1000 (Red part don't use)

LSB: 1 from 1001 11010100 00011011 10000001 (Red part don't use)

Output: 1 00000000 00000000 00000000 10001001 11010100 00011011 10000001 1

6.4.2 Wiegand26 Format

- 1) MSB is even parity bit, LSB is odd parity bit.
- 2) The bits for calculating even parity are within the first 12 bits.
- 3) The bits for calculating odd parity are within the last 12 bits.

For example:

Data Hex: D4 1B 81

Data Binary: 11010100 00011011 10000001

MSB: 1 from 11010100 0001

LSB: 0 from 1011 10000001

Output: 1 11010100 00011011 10000001 0

6.4.3 Wiegand32 Format

- 1) MSB is even parity bit, LSB is odd parity bit.
- 2) The bits for calculating even parity are within the first 15 bits.
- 3) The bits for calculating odd parity are within the last 15 bits.

For example:

Data Binary: 00111111010101010101010110010000

MSB: 1 from 001111110101010

LSB: 1 from 101010110010000

Output: 1 00111111010101010101010110010000 1

6.4.4 Wiegand32e Format

Wiegand32e don't have odd/even parity bits.

6.4.5 Wiegand34 Format

- 1) MSB is even parity bit, LSB is odd parity bit.
- 2) The bits for calculating even parity are within the first 16 bits.
- 3) The bits for calculating odd parity are within the last 16 bits.

For example:

Data Hex: 89 D4 1B 81

Data Binary: 10001001 11010100 00011011 10000001

MSB: 1 from 10001001 11010100

LSB: 1 from 00011011 10000001

Output: 1 10001001 11010100 00011011 10000001 1

6.4.6 Wiegand40 Format

Wiegand40 don't have odd/even parity bits.

6.4.7 Wiegand42 Format

- 1) MSB is even parity bit, LSB is odd parity bit.
- 2) The bits for calculating even parity are within the first 20 bits.
- 3) The bits for calculating odd parity are within the last 20 bits.

For example:

Data Hex: 00 89 D4 1B 81

Data Binary: 00000000 10001001 11010100 00011011 10000001

MSB: 0 from 00000000 10001001 1101

LSB: 0 from 0100 00011011 10000001

Output: 0 00000000 10001001 11010100 00011011 10000001 0

6.4.8 Wiegand50 Format

- 1) MSB is even parity bit, LSB is odd parity bit.
- 2) The bits for calculating even parity are within the first 24 bits.
- 3) The bits for calculating odd parity are within the last 24 bits.

For example:

Data Hex:01 00 89 D4 1B 81

Data Binary: 00000001 00000000 10001001 11010100 00011011 10000001

MSB: 0 from 00000001 00000000 10001001

LSB: 1 from 11010100 00011011 10000001

Output: 0 00000001 00000000 10001001 11010100 00011011 10000001 1

6.4.9 Wiegand56 Format

Wiegand56 don't have odd/even parity bits.

7 TCP/IP communication

- 1) Choose "TCP/IP" in Combo box, as follow:



- 2) Set the static IP address for the machine



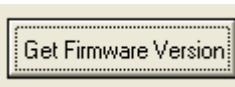
Remote IP 192.168.1.100

Note: The IP address default value is 192.168.1.100 which built in machine. It can be changed by using in your actual network environment. That will be description in TCP/IP web server part.

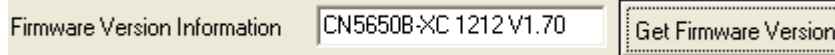
- 3) Click “CV_UDPRun” button



- 4) The testing of TCP/IP working status. Please click “Get Firmware Version” button



If the TCP/IP communication between the host PC and the machine working well, the machine will return the firmware version information, show as follow:



Firmware Version Information CN5650B-XC 1212 V1.70 Get Firmware Version

Otherwise, you need to check the TCP/IP connection line and host PC TCP/IP settings, and then repeat step1 to step 4.

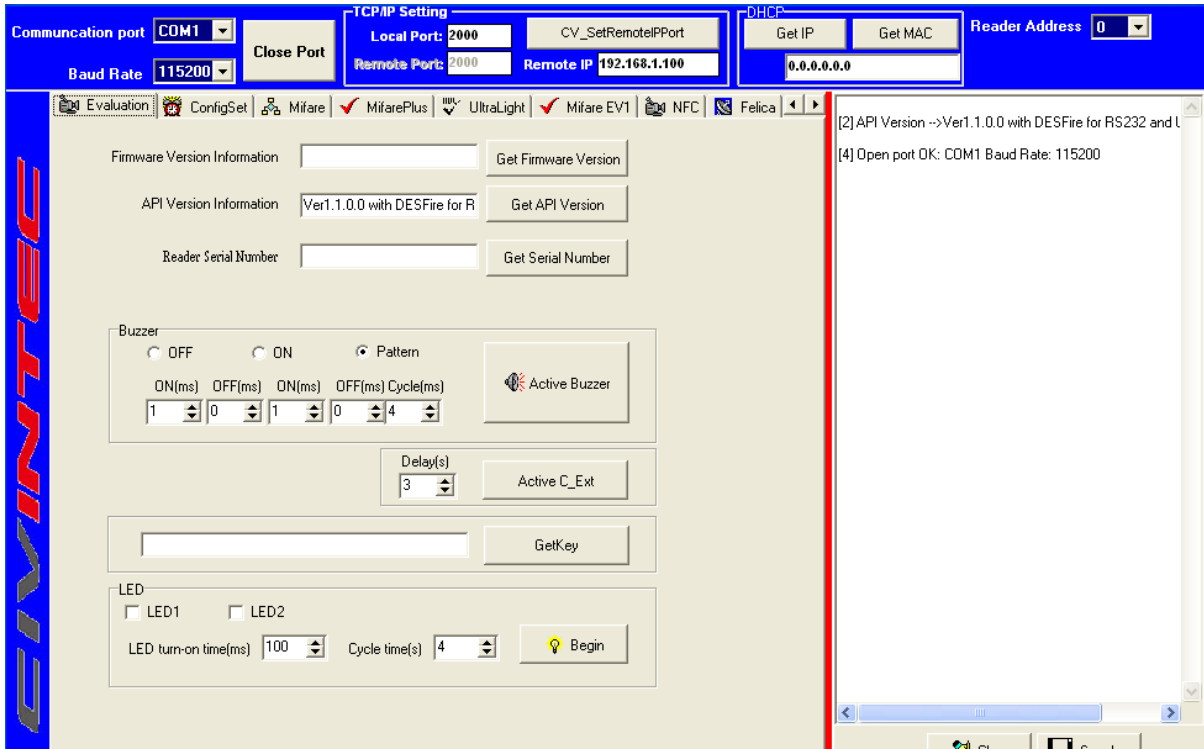
- 5) Stop TCP/IP communication
Click “CV_UDPStop” button



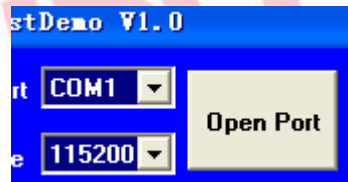
8 Get IP address and MAC address

For easy to get IP address and MAC address, you need access the machine with RS232/RS485 communication type.

- 1) Open Host Demo which CIVTEC offered



2) Choose COM port and open the port



3) Get the IP address and MAC address



9 The Web Server of machine

The CN56X0B-X-XX built in a web server, so you can access the web server via host PC, it support some main functions as follow:

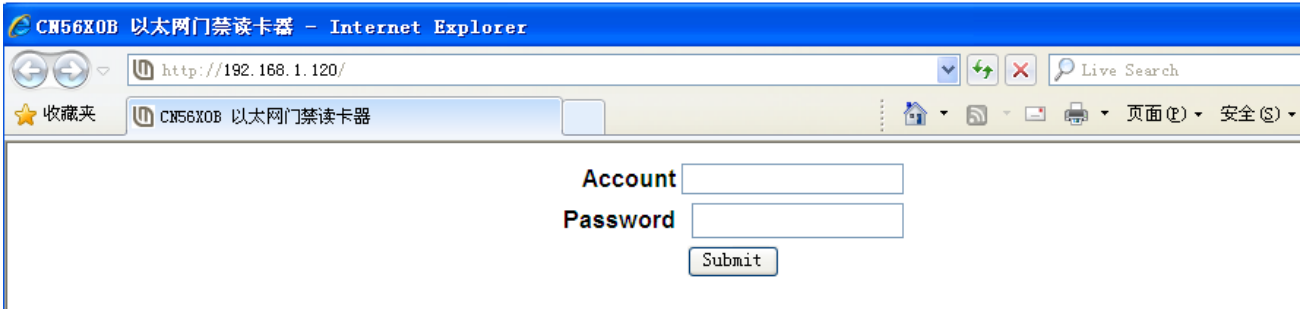
- 1) Get/Set IP address, sub MASK, Gate Way, firmware version, module name etc.
- 2) Reset the machine
- 3) Firmware Upgrade
- 4) Restore factory default settings
- 5) Change password for the account

9.1 login web server by IE explorer

Login web server can use Microsoft IE explorer or other explorer, such as Google Chrome.

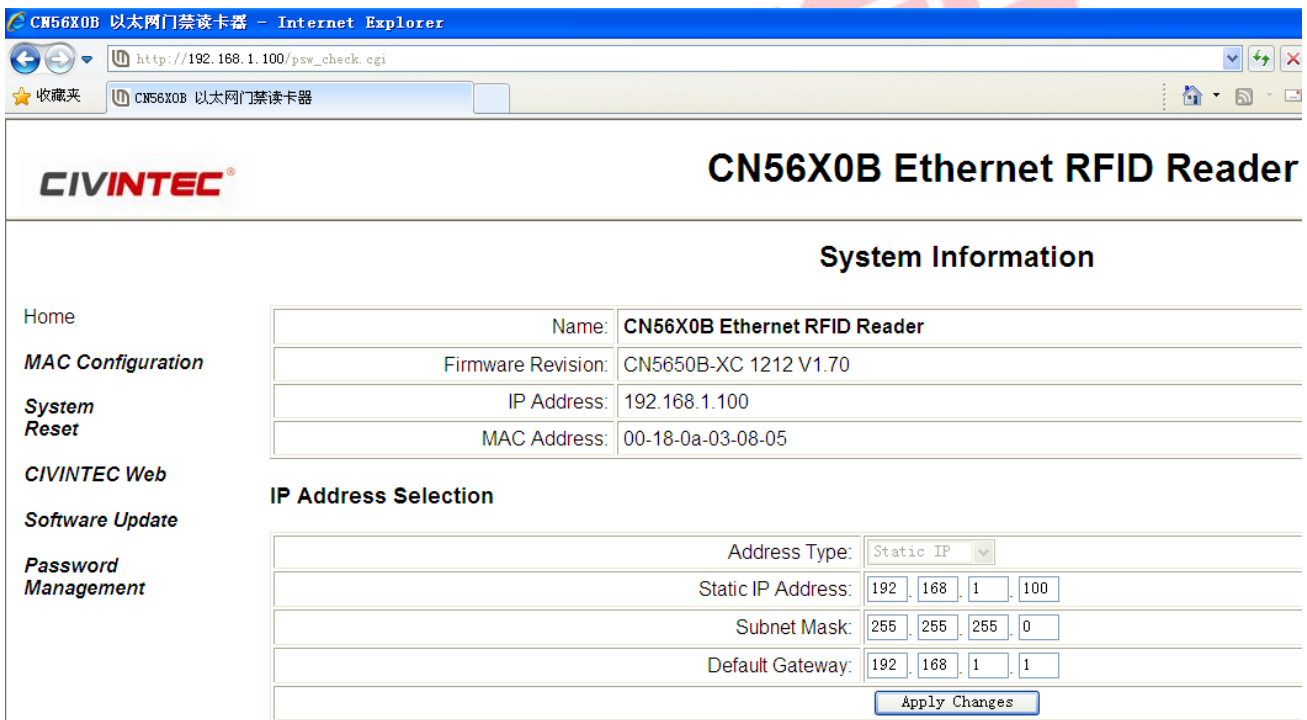
Note: We recommend internet explorer is Google Chrome, it is better than Microsoft IE8 in our testing.

Fill IE explorer with the machine's IP address at URL address bar, illustrate with a example as follow:



You have to enter the correct Account and Password after button to login

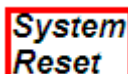
Note: default of Account is "admin", Password is "cn5630b" (modifiable login password)



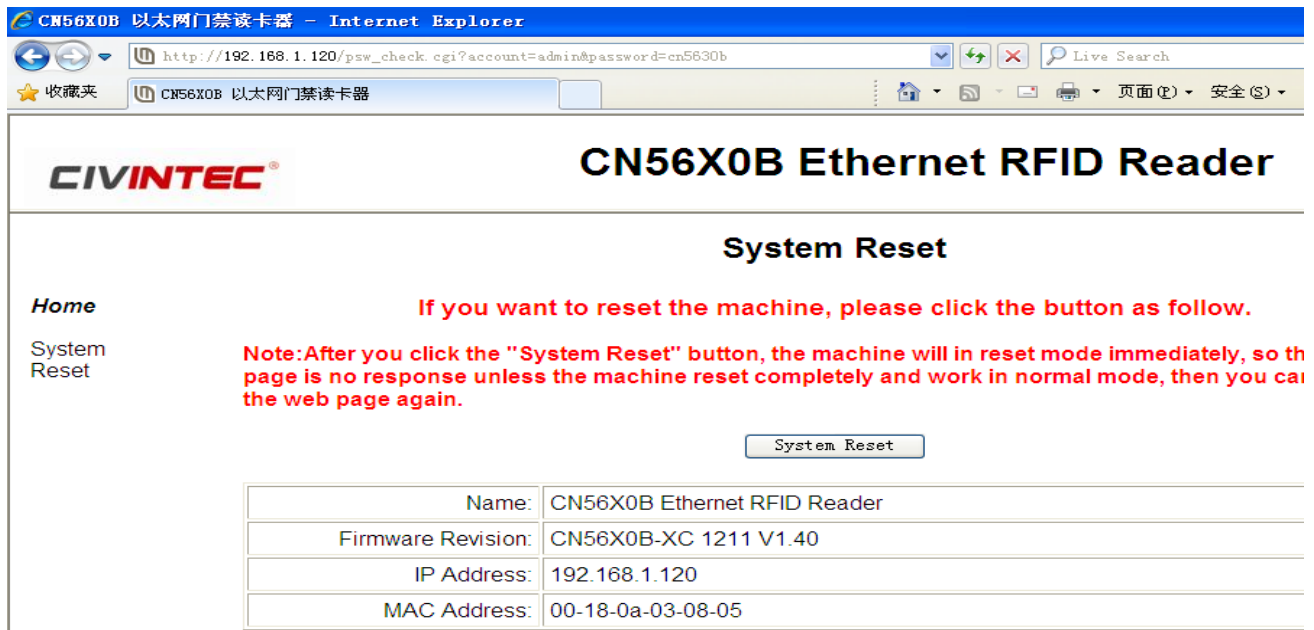
If the machine is running and the TCP/IP connection from host to machine is working well, it will show as below:

9.2 System reset via web pages

It's easy to reset the system of the machine via web pages, click "System Reset" on home page.



After that you can see the system reset page,



Click the "**System Reset**" button, and then the machine enter in reset mode, it will last several seconds. After reset completed, you can access the web page again.

9.3 IP address reconfiguration

The machine built in default IP parameters as below:

Address Type:	Static IP
Static IP Address:	192 . 168 . 1 . 100
Subnet Mask:	255 . 255 . 255 . 0
Default Gateway:	192 . 168 . 1 . 1
Apply Changes	

You can reconfiguration it by you actual network using. Click **Apply Changes** button to submit your changes.

Note1: If the IP parameters changed, the new parameters will be effective after your reset the machine.

Note2: If the IP address changed, please use the new address to login in the web pages.

9.4 MAC address

Our products which with TCP/IP function have a unique MAC address, it were set in our manufacture procedure. Therefore, you no need to change it, because maybe it'll cause some TCP/IP communication problems.

Note: Please don't use the MAC configuration function as follow:

MAC Configuration

9.5 Module name redefinition

You can change the default module name to others which you like.

Module Name:	<input style="width: 80%;" type="text" value="CN56X0B Ethernet RFID Reader"/>
<input type="button" value="Apply Changes"/>	

Note1: The module name length less than 40 characters.

9.6 Restore factory defaults

Restore all options to their factory default states:	<input type="button" value="Restore Defaults"/>
--	---

Note1: If the load the factory defaults, it will be effective after your reset the machine.

Note2: Please use the default IP address to login the web pages after machine reset completed.

Note3: The factory default IP address is "192.168.1.120"

9.7 Firmware Upgrade

There has two solutions for upgrading firmware described as below:

9.7.1 Firmware Upgrading via web pages

- 1) Log to upgrading web page
Click "**Software Update**" on home page

Then, enter in upgrading web page, show as follow:

The screenshot shows a web browser window with the URL `http://192.168.1.100/psw_check.cgi`. The page title is "CN56X0B Ethernet RFID Reader". The main content area is titled "Firmware update" and contains a button labeled "Enter in Update Mode". Below the button is a table displaying system information:

	Name:	CN56X0B Ethernet RFID Reader
	Firmware Revision:	CN5650B-XC 1212 V1.70
	IP Address:	192.168.1.100
	MAC Address:	00-18-0a-03-08-05

- 2) click “”

If the machine in update mode, the green led which on the front of the machine will light on.

Note1: The factory default IP address is “192.168.1.100”]

- 3) Login in updating web page

After step2, the normal application program jump to upgrade application which running in machine , so you need login in again.If login successfully, it will show:

Login

Enter user ID and password:

User ID Password

If you can't see the above login page, please refresh the IE explorer, click here “”

- 4) Key in password

The User ID and password as follow :

User ID: 000000

Password: 000000

After you key in the user ID and password, please click , and then you'll see:

Please specify a binary file to upload into STM32F107 flash:

- 5) Choose a bin file to upgrade

Click browser button to choose a bin file which our company offered.

And then, click , wait for about 20 seconds, if the operation of upload successfully, it will show:

File Upload Done!

Note: Don't forget to refresh your IE explorer when you can't access the demonstration page. Because of the IE can store the foregoing pages in cache automatically.

9.7.2 The startup of Firmware Upgrading page via keypad

- 1) Power off the machine when it in running status
- 2) Keep the “*” key in down status, and then power the machine on.
If the machine enter in update mode successfully, the green led will be light on.
- 3) Login in updating web page
After step2, the normal application program jump to upgrade application which running in machine ,so you need login in again.

9.8 password management

you can click“password management” link change login Password , show as follow

Home

Old Password:	<input type="text"/>
New Password:	<input type="text"/>
Confirm Password:	<input type="text"/>

Enter old password and new password and confirm password in below window after click “Apply changes”Button,

Home

Old Password:	<input type="text" value="cn5630b"/>
New Password:	<input type="text" value="....."/>
Confirm Password:	<input type="text" value="....."/>

Note:Password length less than 9 characters.

9.9 Restore factory defaults via keypad

If you don't want using web page to restore the factory defaults, or you don't know the IP address, so can't access web pages of the machine, you can use the another way to recover it.

- 1) Make sure the machine in power off status
- 2) Keep the “#” key in down status, and then power the machine on.
If the restore factory defaults successfully, the green led and the red led which on the front board of the machine will in flicking status alternately.
- 3) Reset the machine via power off and power on.
If the operation failed, please repeat Step1 to Step3.

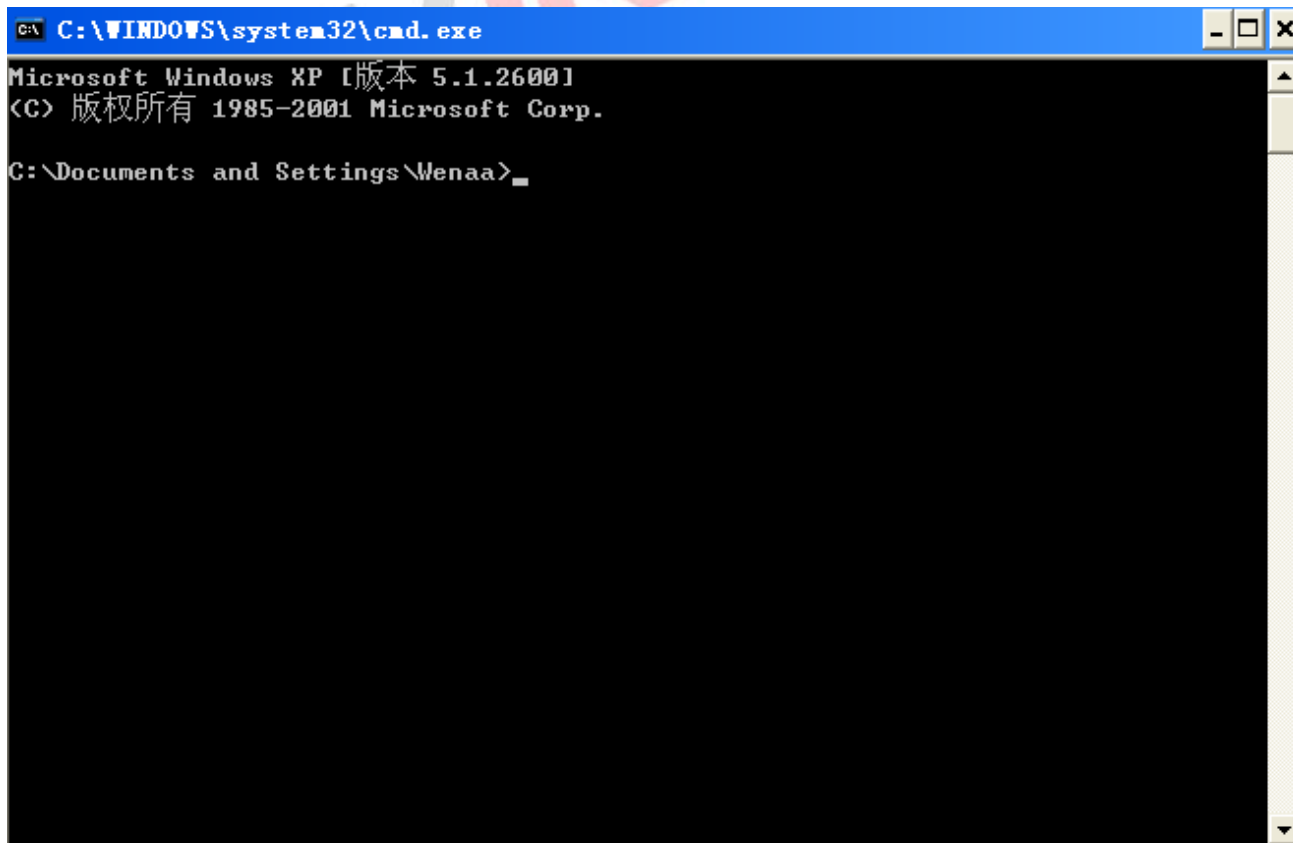
Note: Restore factory set the IP address for 192.168.1.120

10 TCP/IP communication test and failed solution

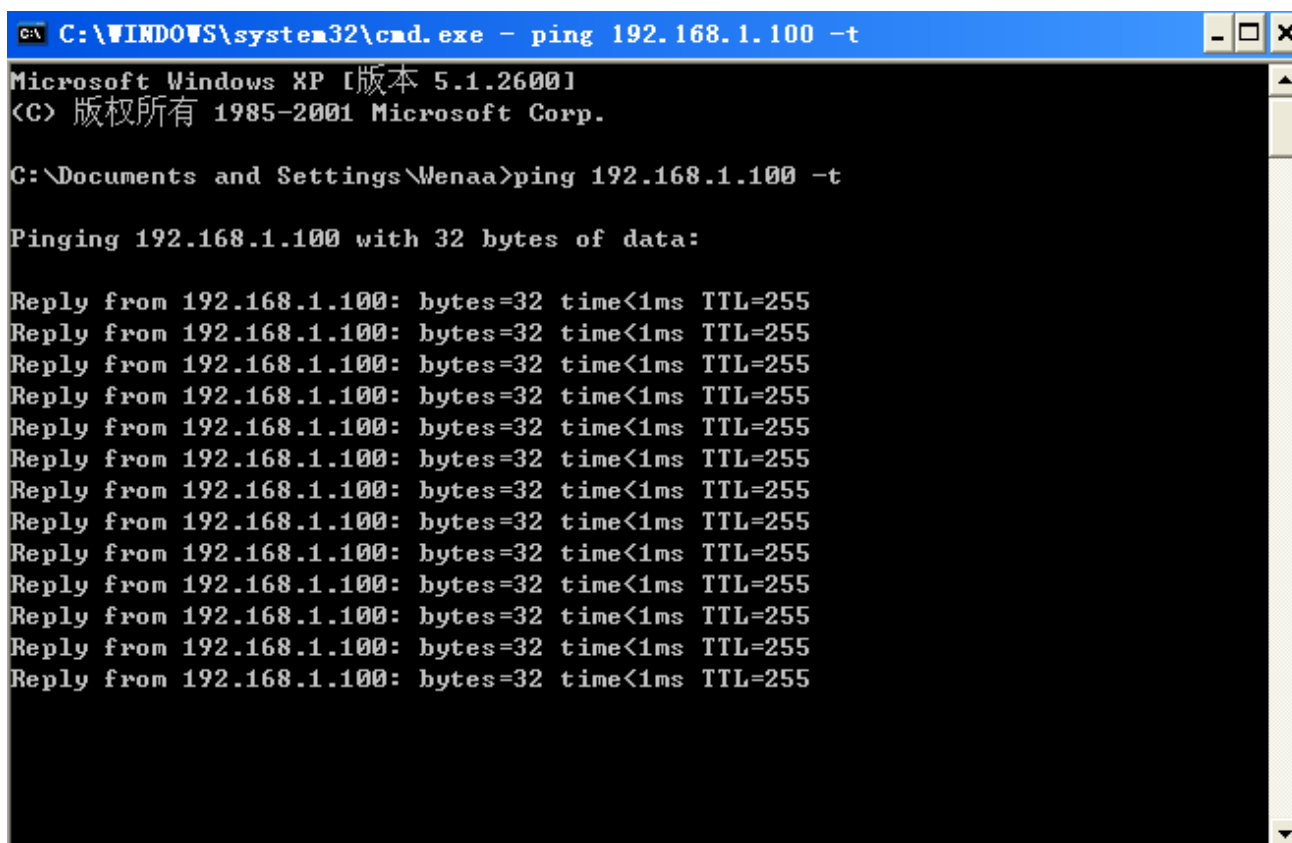
In network structure, the router is essential. After our product add in the network environment. You need to test the communication from your host PC to machine. The test procedure as follows:

10.1 TCP/IP communication test

- 1) Make sure the connection between host PC and the machine for TCP/IP communication is created.
- 2) Power on the machine
- 3) Enter in Dos system window. (We presume the OS of your host PC come from Microsoft series.)



- 4) Key in “Ping 192.168.1.100 -t” on command line (This IP address is factory default)



```
C:\WINDOWS\system32\cmd.exe - ping 192.168.1.100 -t
Microsoft Windows XP [版本 5.1.2600]
(C) 版权所有 1985-2001 Microsoft Corp.

C:\Documents and Settings\Wenaa>ping 192.168.1.100 -t

Pinging 192.168.1.100 with 32 bytes of data:

Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
```

If “Reply from 192.168.1.100: bytes=32 time<1ms TTL=225” indicate the TCP/IP communication is working well. Otherwise, please go to [10.2 TCP/IP communication failed solution](#)

10.2 TCP/IP communication failed solution

When you ping to machine by 192.168.1.100, but can't receive the response from the machine, such as like this:

```

C:\WINDOWS\system32\cmd.exe - ping 192.168.1.100 -t
Microsoft Windows XP [版本 5.1.2600]
(C) 版权所有 1985-2001 Microsoft Corp.

C:\Documents and Settings\Wenaa>ping 192.168.1.100 -t

Pinging 192.168.1.100 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

```

- 1) Restore factory defaults. Please refer to “9. Restore factory defaults via keypad”
After this step, the machine IP parameters as follows:

Address Type:	Static IP
Static IP Address:	192 . 168 . 1 . 100
Subnet Mask:	255 . 255 . 255 . 0
Default Gateway:	192 . 168 . 1 . 1
<input type="button" value="Apply Changes"/>	

- 2) Delete machine IP information from router table of router.
Key in “arp -d” or Key in “arp -d XXX-XXX-XXX-XXX”
The “XXX-XXX-XXX-XXX” is current IP address which you know of the machine. If you don’t know the current IP address, key in “arp -d”

```

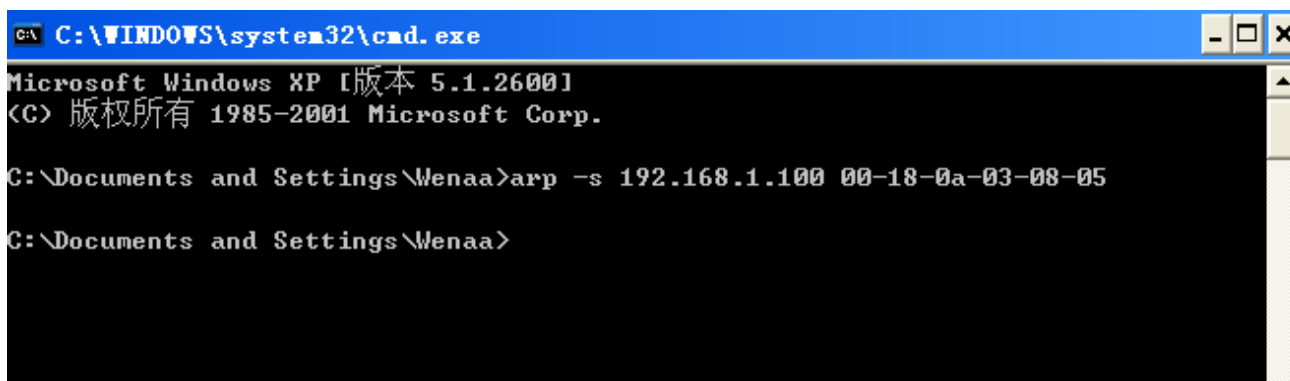
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [版本 5.1.2600]
(C) 版权所有 1985-2001 Microsoft Corp.

C:\Documents and Settings\Wenaa>arp -d_

```

- 3) Binding IP address and MAC address in your router.

Key in “arp -s 192.168.1.100 00-18-0a-03-08-05” on command line

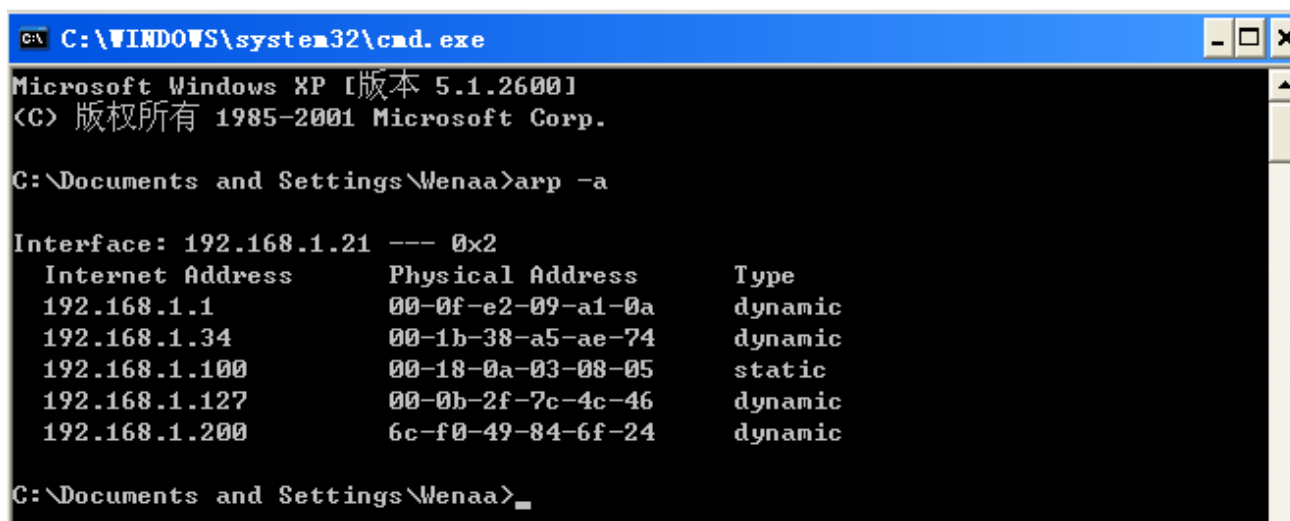


```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [版本 5.1.2600]
(C) 版权所有 1985-2001 Microsoft Corp.

C:\Documents and Settings\Wenaa>arp -s 192.168.1.100 00-18-0a-03-08-05

C:\Documents and Settings\Wenaa>
```

- confirm the arp setting
input “arp -a”



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [版本 5.1.2600]
(C) 版权所有 1985-2001 Microsoft Corp.

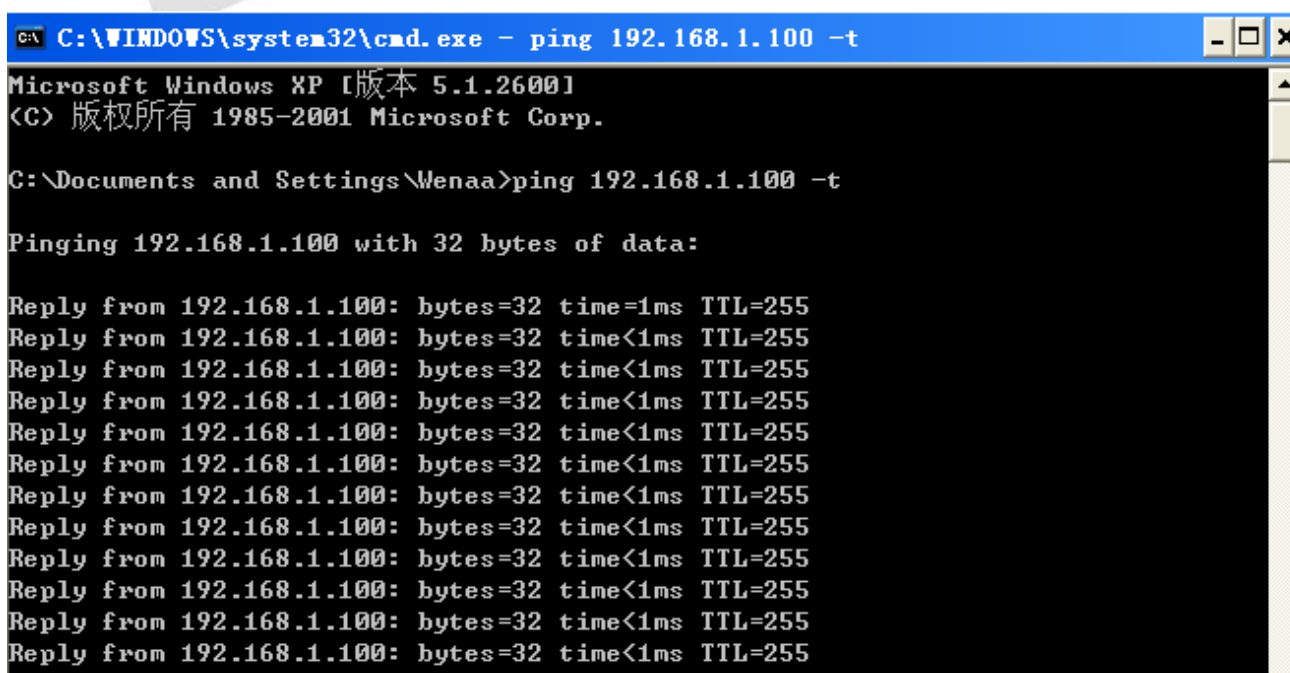
C:\Documents and Settings\Wenaa>arp -a

Interface: 192.168.1.21 --- 0x2
 Internet Address      Physical Address      Type
192.168.1.1           00-0f-e2-09-a1-0a    dynamic
192.168.1.34          00-1b-38-a5-ae-74    dynamic
192.168.1.100         00-18-0a-03-08-05    static
192.168.1.127         00-0b-2f-7c-4c-46    dynamic
192.168.1.200         6c-f0-49-84-6f-24    dynamic

C:\Documents and Settings\Wenaa>
```

If you see “192.168.1.100 00-18-0a-03-08-05 static”, that indicate the setting is successful.

- Testing



```
C:\WINDOWS\system32\cmd.exe - ping 192.168.1.100 -t
Microsoft Windows XP [版本 5.1.2600]
(C) 版权所有 1985-2001 Microsoft Corp.

C:\Documents and Settings\Wenaa>ping 192.168.1.100 -t

Pinging 192.168.1.100 with 32 bytes of data:

Reply from 192.168.1.100: bytes=32 time=1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
Reply from 192.168.1.100: bytes=32 time<1ms TTL=255
```

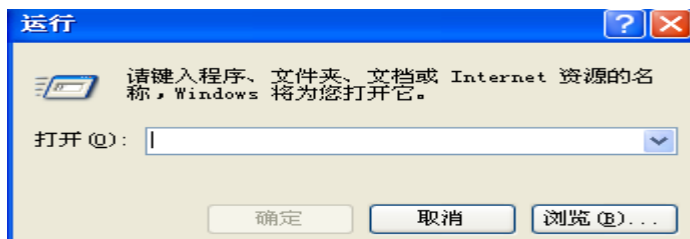
In generally, the TCP/IP communication will be working well now.

11 Firmware update by RS232 or RS485

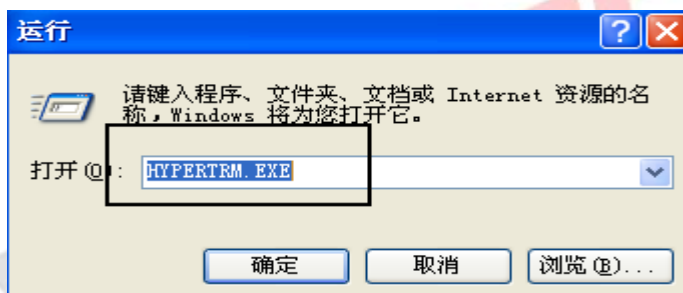
- 1) Make sure the RS232/RS485 communication between the machine and the host PC working well.
- 2) Power off the machine if it's in working status.
- 3) Create a Hyperterminal in your host PC.

The following steps show how to create Hyperterminal on Windows XP:

step1: Go to "Run" command line on Win XP .



step2: Key in "HYPERTRM.EXE" on command line, and then click Confirm button

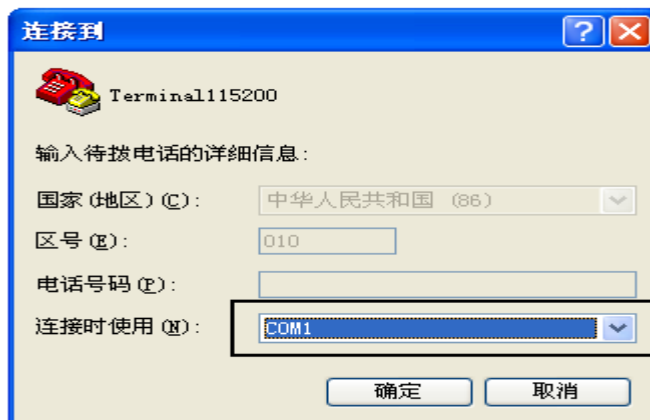


step3: After operation 2, you can see:



Input a "name" which you like, and then go to next step.

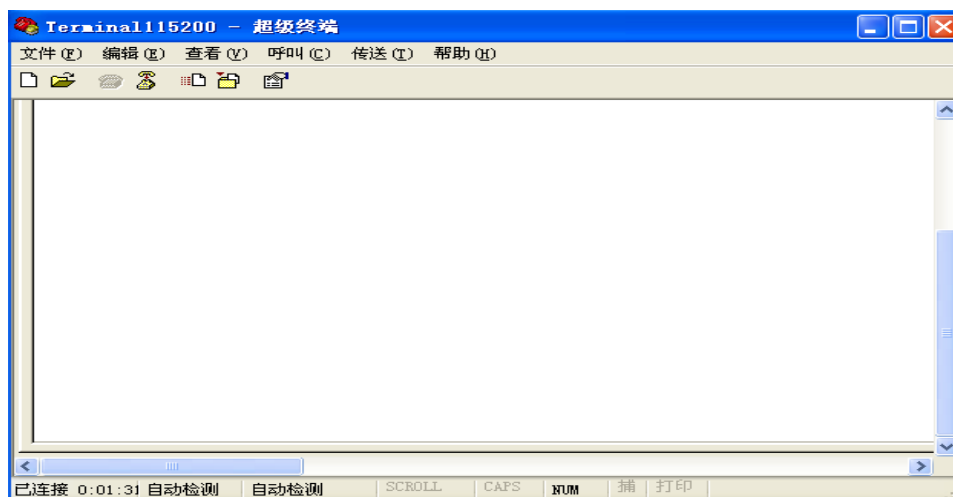
step4: Choose a COM port and then go to next step.



step5: Config the COM port as follow parameters.

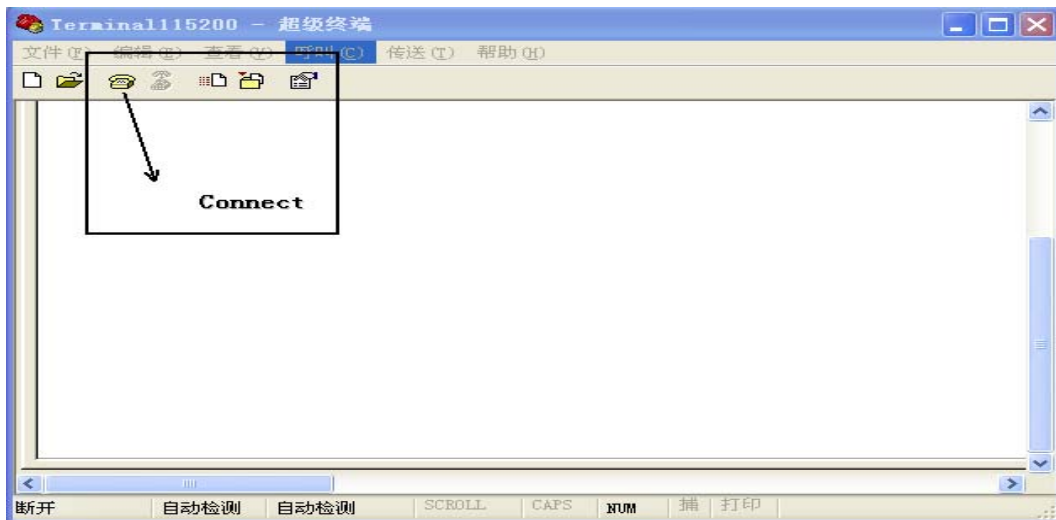


step6: After Operation 5 the, the creating is finished. You'll see:



step7: Connect to the machine. Click the “Connect” ICON.

By this time, you can communicate with the machine by COM port



- 4) Press Key “0” on keypad of the machine, and don’t loosen (**apply to 1C series**) or short circuit Jp2 (**apply to 0C series**)
- 5) Power on the machine under the Key “0” pressed down.
- 6) After Waiting several seconds, you would heard a long beep, it indicates enter in upgrade mode successfully. The HyperTerminal will show like this:

```

===== Main Menu =====
Download Image To the CN56X0B-X-XX Internal Flash ----- 1
Execute The New Program ----- 3
=====

```

- 7) Key in “1” on HyperTerminal to download a new image file to CN56X0B internal flash

```

===== Main Menu =====
Download Image To the CN56X0B-X-XX Internal Flash ----- 1
Execute The New Program ----- 3
=====

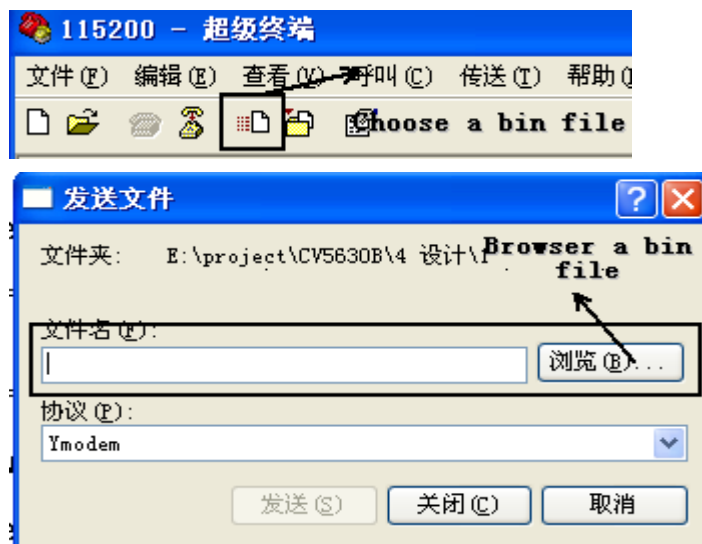
```

- 8) After key in “1” , the machine waiting for download mode.

```

===== Main Menu =====
Download Image To the CN56X0B-X-XX Internal Flash ----- 1
Execute The New Program ----- 3
=====
Waiting for the file to be sent ... (press 'a' to abort)
CCCCCCCCCCCC
    
```

9) Choose a bin file which offered by CIVTEC



10) Transmitting



If the transmitting successfully, it will show like this:

Programming Completed Successfully!

Name: CN56X0B-XC_0815_Test27.bin
 Size: 125250 Bytes

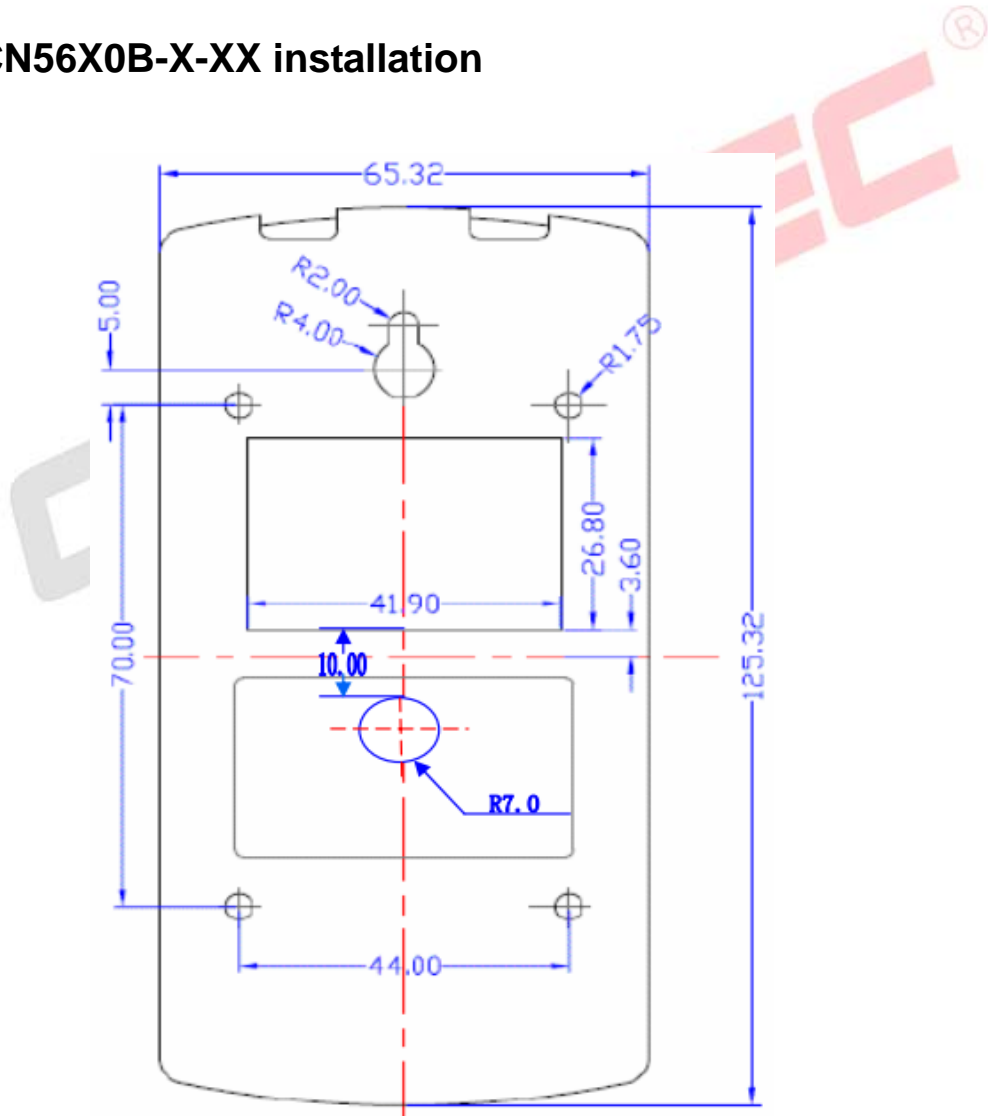
```

===== Main Menu =====
Download Image To the CN56X0B-X-XX Internal Flash ----- 1
Execute The New Program ----- 3
=====
    
```

11) Input "3" on HyperTerminal to execute the new program.

12 Installation

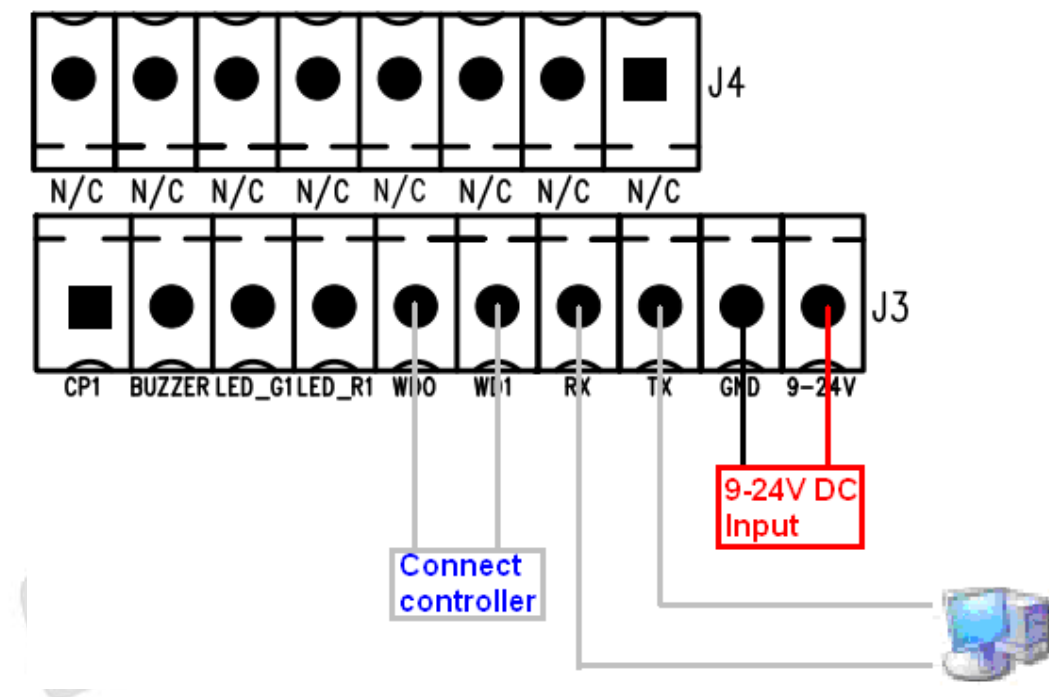
12.1 CN56X0B-X-XX installation



- 1) Drill four holes on the Installation location at mounting plate;
- 2) Plug rubber stopper;
- 3) Install mounting plate on the Installation location;
- 4) Twist four screws fixed mounting plate;
- 5) Attach the reader to mounting plate.

13 Connection Diagram

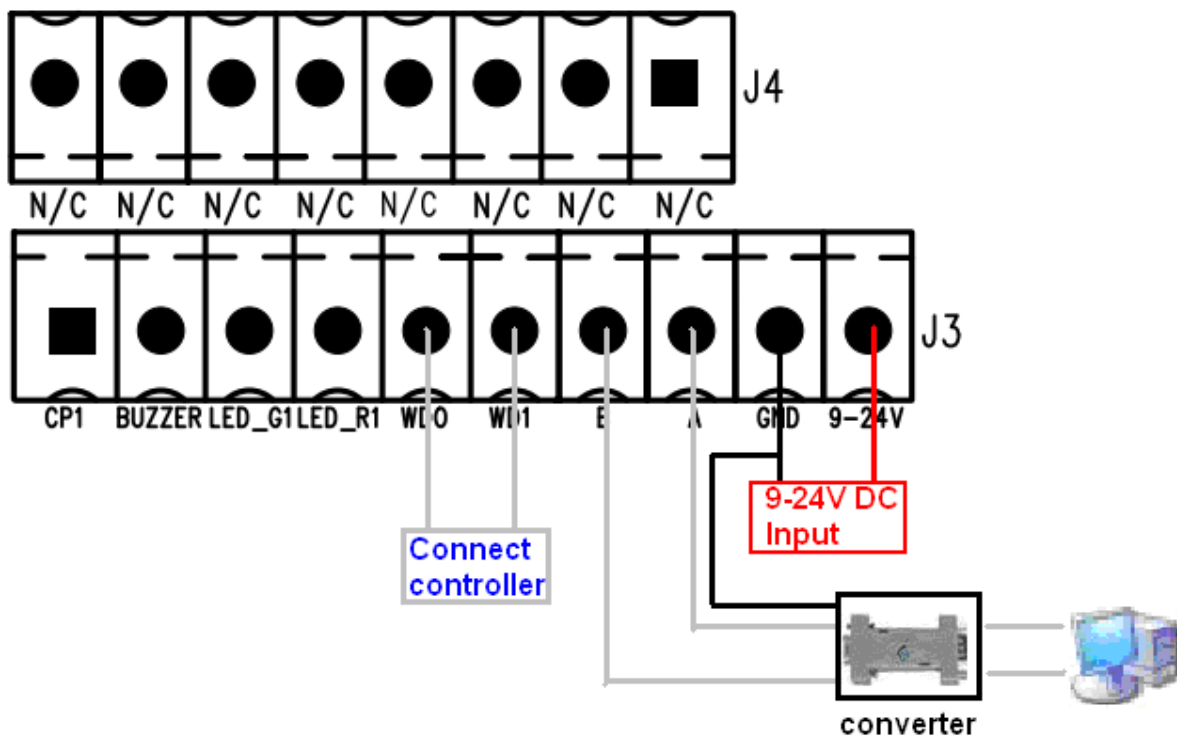
13.1 RS232 connection diagram



J3:

9-24V	DC Power input, DC(9~24V)
GND	Groud
TX	Connect to RS232 TX of PC
RX	Connect to RS232 RX of PC
WD1	Data1 signal (connect an external wiegand reader Data1)
WD0	Data0 signal (connect an external wiegand reader Data0)

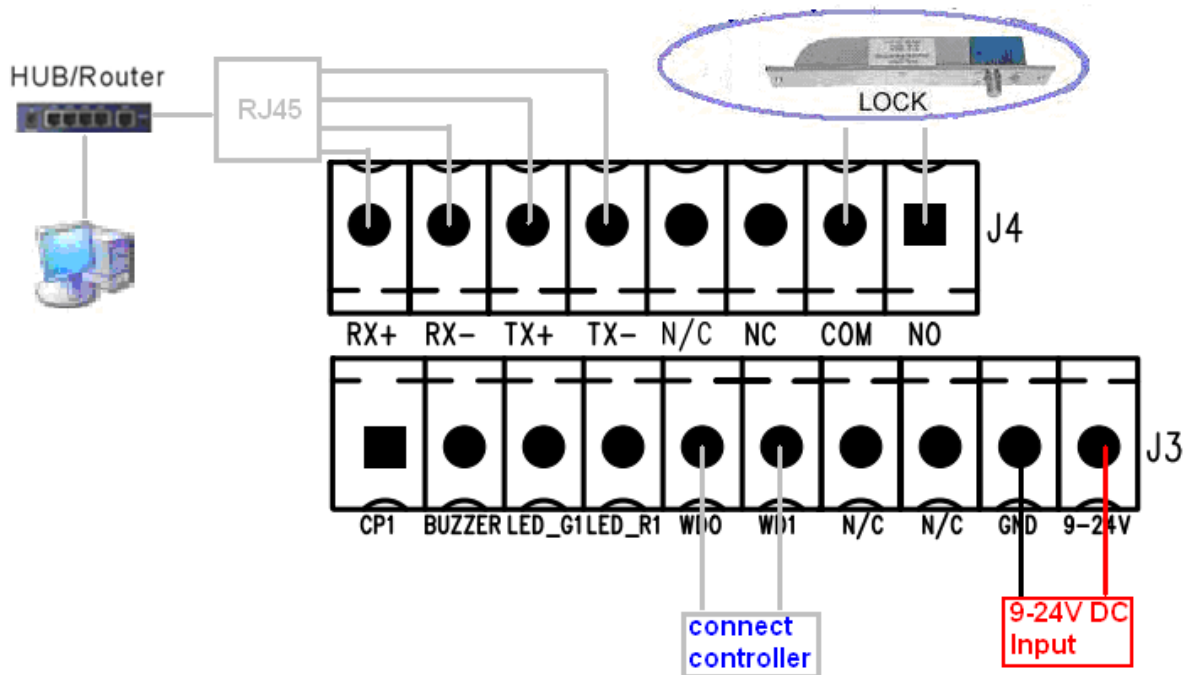
13.2 RS485 connection diagram



J3:

- 9-24V** DC Power input, DC(9~24V)
- GND** Groud
- A** Connect to RS485A of RS485 network of PC
- B** Connect to RS485B of RS485 network of PC
- WD1** Data1 signal (connect an external wiegand reader Data1)
- WD0** Data0 signal (connect an external wiegand reader Data0)

13.3 TCP connection diagram



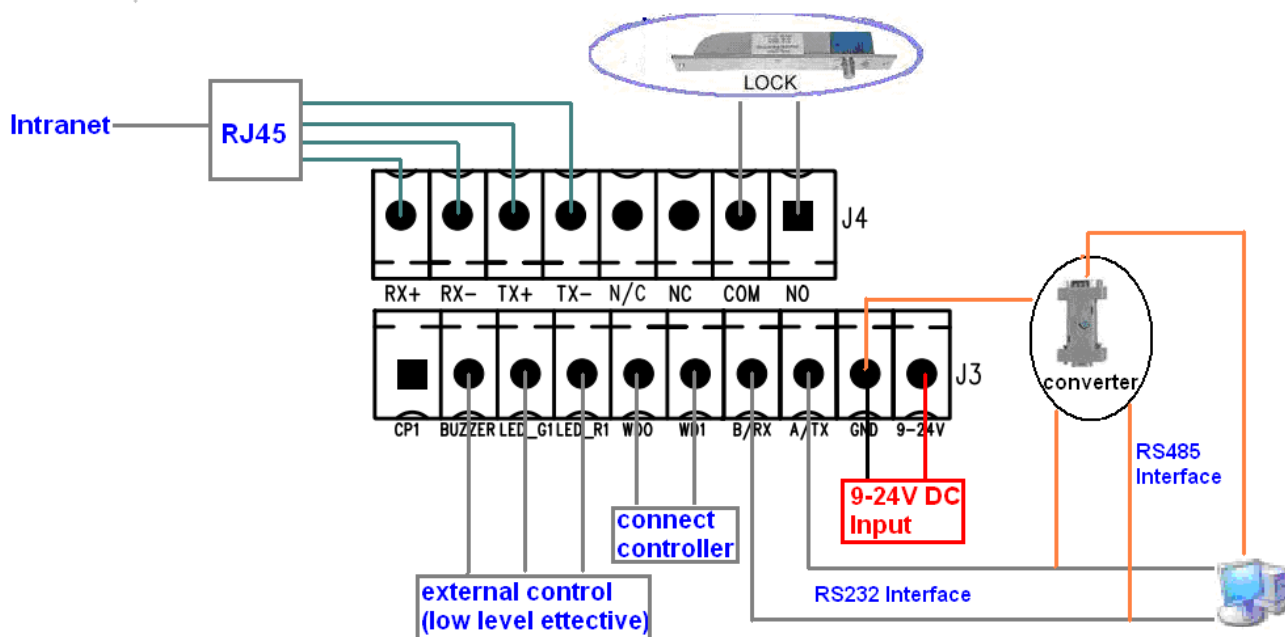
J3:

- 9-24V DC Power input, DC(9~24V)
- GND Groud
- WD1 Data1 signal (connect an external wiegand reader Data1)
- WD0 Data0 signal (connect an external wiegand reader Data0)

J4:

- NO normally open of lock relay
- COM common port of lock relay
- TX- Tranceive Data-; connect to green wire of network cable(pin 6).
- TX+ Tranceive Data+; connect to white/green wire of network cable(pin 3).
- RX- Receive Data-; connect to orange wire of network cable(pin 2).
- RX+ Receive Data+; connect to white/orange wire of network cable(pin 1)

13.4 Typical Connection Diagram



[Note:]

The Lock Device have been set as Relay output, which support contact output only; the external power source is required; the corresponding cable must suit to the working current of selected components

14 Revision history

V1.0 First Version

15 Technical support and latest documentation download

We have professionals to provide prompt, comprehensive technical support. If you have any technical questions, please contact support@cv-it.com.

Latest documentation download is provided in "My Community" on our website using your authorized login and password. Section "Support" is for your download of all latest technical documentation. The link

Username: Password: [forgot username or password](#)

With the user name and password you are authorized, you are entitled to FREE entry to China Vision's My Community area, and you will receive your user name and password pack approximately two weeks after the first time you purchase products from China Vision

► **How to join My Community**



16 Repair and maintenance



Only professional personnel can do repair work, and users should ensure the power off and make power plug in the monitoring range before any repair or maintenance.

For the correct use and prolong the service life, it is necessary for users to do regular repair and maintenance according to the specifications, or both the operation and reliability of the machine will be affected.

- Keep the machine and working area clean, avoid dust into the machine.
- Avoid machine used in extreme low or high temperature environment.
- Avoid all kinds of harmful gases, inflammable, explosive and corrosive chemicals, and should be far away from strong electromagnetic field.
- Avoid machine's operation procedures changed and other abnormal operations.

17 Store

Put the products in the original packaging box when users want to store them, and general storage period is six months. Warehouse environment temperature should be -10 ~ + 40, relative humidity 30% ~ 80%; No harmful gases, inflammable, explosive and corrosive chemicals existed, and must be away from strong electromagnetic field.