Access controller wiring and parameter description

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## 1、power supply

Position: j15 12V , GND

Parameters: 12V DC input, with power overcurrent, overvoltage and prevent reverse connection protection

Note: the input power supply of the control board supports 9-24VDC, and the supported voltage range will be wider. Therefore, when connecting 24VDC power supply, it is necessary to consider whether the external reader supports it.

## 2、Communication mode

**2.1 RJ45 network wired communication**

Position：J18

Parameters：RJ45 ，10M/100M Network communication mode, default IP address：192.168.1.15

**2.2 4G Telecommunications**

Position：J12 7P socket

There are four types of 4G modules according to global regions: 1) China version 2) European version 3) South American version 4) North American version

1) China version

Support 4G traffic SIM cards of China Telecom, China Unicom and China Mobile all Netcom (Note: China GSM has been eliminated and is no longer supported)

Frequency band：LTE-FDD:B1/B3/B5/B8;

LTE-TDD:B34/B38/B39/B40/B4

2）European version

Version 1（Standard）

Frequency band： LTE-FDD: B1/B3/B5/B7/B8/B20

Extensible GSM: 900M/1800M

Version 2 (custom version)

Frequency band： LTE-FDD: B1/B3/B5/B7/B8/B20

LTE-TDD：B38/B40/B41

WCDMA：B1/B5/B8

GSM: 900/1800MHz

3）South American version

Version 1 (Standard Version)

Frequency band： LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B28/B66

Extensible GSM: 850/900/1800/1900MHz

Version 2 (custom version)

Frequency band： LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B28/B66

LTE-TDD：B40

WCDMA：B1/B2/B5/B8

GSM: 850/900/1800/1900MH

4）North American version (customized version)

Frequency band： LTE-FDD: B2/B4/B12

WCCDMA：B2/B5

Note: for the North American version, due to the limitations, Qualcomm solution is required, which will lead to large modules and high cost

**2.3 WIFI Telecommunications**

Position：J9

Parameters：IEEE802.11 b/g/n protocol，Frequency 2.4G，STA Working mode

Note: 1) if WiFi or 4G communication is installed in the gate, due to the problem of the gate shell choose to lengthen the antenna and install the antenna outside the gate shell.

2) 4G module communication SIM card. According to business needs, generally choose a 4G flow card of 300-500M per month, which is cheap. Of course, the temporary test can use your own mobile phone SIM or 4G module。

## 3、Reset

When the access control board is powered on after power failure, it is regarded as a restart。

## 4、Wiegand 26/32/34 input interface( 2 channels)

**4.1** **Wiegand reader input 1：**

Position J1：1D1、1D0、12V、GND

Parameters：

Input Wiegand data to controller to control the relay of J10(LOCK1)

Voltage output：GND,12V，with power overcurrent protection and signal overvoltage protection

**4.1 Wiegand reader input 2：**

Position J2：2D1、2D0、12V、GND

Parameters：

Input Wiegand data to controller to control the relay of J10(LOCK2)

Voltage output：GND,12V，with power overcurrent protection and signal overvoltage protection

## 5、RS232 serial port 2 channels (expandable to 4 channels)

**5.1 RS232 input / output channel 1：**

Position：J21，J16（Dual serial port sharing）

Parameters：J21 is DB9 interface terminal，It can be directly connected to RS232 peripherals of DB9 (such as scanning head / reader, etc.); J16 is a 6p plug-in terminal block, and serial port 1 corresponds to GND, rx1 and TX1 of j16

**5.2 RS232输入输出第2路：**

Position：J22，J16（Dual serial port sharing）

Parameters：J22 is DB9 interface terminal，It can be directly connected to RS232 peripherals of DB9 (such as scanning head / reader, etc.); J16 is a 6p plug-in terminal block,，and serial port 2 corresponds to GND，RX2，TX2 of J16

**5.3 J16 terminal signal description**

Position：J16 GND，RX1，TX1，RX2，TX2，+5V

Parameters：

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| GND | RX1 | TX1 | RX2 | TX2 | 5V |
| Ground signal | Input signal: serial port 1 input | Output signal: serial port 1 output | Input signal: serial port 2 input | Output signal: serial port 2 output | Output 5V, for peripherals |
| Brown wire | Yellow wire | Blue wire | Yellow wire | Blue wire | Red wire |

Table-1：Dual serial port signal definition and wiring description

**5.4 USB1and USB2 Socket signal description**

Position： USB1，USB2

Parameters： Output 5V power supply

These two sockets with USB structure are actually sockets for external power supply (reader or scanner). The USB socket only contains the power supply, and there is no USB signal or serial port signal。

Note: 5V output power supply. The access board can control the on-off of this power supply and has power overcurrent protection. The 5V power supply output by usb1 and USB2 and the 5V power supply on j16 terminal are the same group of power supplies。

**5.5 Serial port working mode setting**

1）Description of working mode of serial port 1：

A: SW1 The red code pulling switch "1" is at the "ON" end of silk screen printing

Connect the QRcode with baud rate of 9600. After scan the qrcode or barcode, the LED indicator RX1 on the board will flash once；

B: SW1 The red code pulling switch "1" is at the "1" end of silk screen printing

Connect the ID card reader with baud rate of 57600. When the communication is normal, the LED indicators RX1 and TX1 on the main board will flash at high frequency. After reading the ID card information, the LED RX1 will light once for a long time；

Note: after the code pulling switch is changed, the access board must be restarted

2）Description of working mode of serial port 2：

A: SW1 he red code pulling switch "2" is at the "ON" end of silk screen printing

Access the QRcode with baud rate of 9600. After scan the qrcode or barcode, the LED indicator RX2 on the board will flash once；

B: S SW1 The red code pulling switch "2" is at the "2" end of silk screen printing

Connect the ID card reader with baud rate of 57600. When the communication is normal, the LED indicators RX2 and TX2 on the main board will flash at high frequency. After reading the ID card information, the LED RX1 will light once for a long time；

Note: after the code pulling switch is changed, the access board must be restarted

**5.6 Expandable dual RS232 serial port**

On the position of 4G socket, a dual serial port module can be added, so that 4 Scanners or 2 ID reader and 2 scannners can be connected

Note: both serial port 1 and serial port 2 have secondary TVs overvoltage protection

## 6、6 external Signal inputs

Position：J5 :BTN1、SEN1、IN1、GND

J6: BTN2、SEN2、IN2、GND

Parameters：

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| J5 | BTN1 | SEN1 | IN1 | GND |
| LOCK1 Exit Button | LOCK1 door contact | Infrared input | Ground signal |
| J6 | BTN2 | SEN2 | IN2 | GND |
| LOCK2 Exit Button | LOCK2 door contact | Fire protection full open input | Ground signal |

Table 2: definition and function description of J5 and J6 signals

J5 input description：

BTN1 and GND Short，Then the relay lock1 acts and can control the door/gate opening

SEN1 and GND are connected to door contact to detect the door1 state；

1N1 and GND are connected with infrared signals, which are generally used to detect personnel passing through the gate and upload this state to the upper computer software

J6 input description：

BTN2 and GND Short，Then the relay lock2 acts and can control the door/gate opening；

SEN2 and GND are connected to door contact to detect the door2 state；

IN2 and GND are connected to the fire input signal. When the fire signal is valid (IN2 and GND are short), lock1 and lock2 act and control the corresponding door or gate to open. When the fire signal is invalid (IN2 and GND are disconnected), lock1 and lock2 return to normal

Note: all 6 signals have overvoltage protection

## 7、Dial switch

Position：SW1

Parameters：SW1 is a 4P red dial switch

The status of dial switch has two types：

1、default status：The dial switch is at the "on" end；

2、Dial down status：The dial switch is at the corresponding digital "1 / 2 / 3 / 4" end；

Dial switch 1

Dial switch 1 controls serial port 1，When it is in the default state, serial port 1 is connected to the QRcode or Barcode with baud rate of 9600; After dialing, serial port 1 is connected to an ID card reader with baud rate of 57600；

Dial switch 2

Dial switch 2 controls serial port 2，When it is in the default state, serial port 2 is connected to the QRcode or Barcode with baud rate of 9600; After dialing, serial port 2 is connected to an ID card reader with baud rate of 57600；

Dial switch 3,4

Dial switches 3 and 4 are used to detect whether the control board performs initialization. When it is in the down state and 1 and 2 are also in the down state, restart and the system starts to perform initialization。

## 8、Initialization

The device restores the factory value, the IP address restores to 192.168.1.15, and the information in the control board is cleared.

Initialization operation method:

Step1: in the power on state, pull all SW1 code pulling switches to the digital "1 / 2 / 3 / 4" end;

Step 2: power off and restart the control board;

Step3: after restart, pull the code pulling switch back to the corresponding working state;

Step4: power off and restart again.

## 9、Voice amplifier output and volume adjustment

Position：J601：GND、SPK

VR601: Volume adjustment knob

Parameters：

1) GND (-) is connected to the negative of the speaker and SPK (+) is connected to the positive of the speaker

2）t is recommended to connect an external 8 ohm or 4 ohm, 4-inch full frequency loudspeaker

3）Maximum output power:18W

4) VR601, Rotate clockwise to decrease the volume and counterclockwise to increase the volume.

## 10、Relay output 4 channels

Position：J10、J11

Parameters：

J10:1C、1NO、1NC、2C、2NO、2NC

J11:3C、3NO、3NC、4C、4NO、4NC

Control lock1: serial port 1 inputs valid, reader1 inputs valid, BTN1 turns on GND;

Control lock2: serial port 2inputs valid, reader2 inputs valid, BTN2 turns on GND;

Control lock3: extended relay output, which can be controlled by software

Control lock4: extended relay output, which can be controlled by software

## 11、TTL232 input and output 1 channel

Position：J17: +5V,GND,RX4,TX4

Parameters：

1）TTL232 input and output are suitable for short-range 232 communication. Without RS232 chip, TTL level is directly used for communication, which is convenient for external TTL232 peripherals, such as 7-inch TFT true color screen with TTL232 interface

2）The only difference between ttl232 and RS232 is that TTL232 does not need RS232 chip, and the communication principle is the same as RS232

3）+5V and GND are used to supply power to peripherals, and RX4 and TX4 are signals for communication between control board and peripherals。

RX4 is the signal output from the peripheral to the access board, and TX4 is the signal output from the access board to the peripheral。

## 12、Access motherboard size

Length \* width：188mm\*100mm

Motherboard size：Length \* width：188mm\*100mm

Positioning hole： Length \* width：180mm\*92mm，

Inner diameter of Positioning hole:： 4mm

## 13、Development API

Provide Chinese and English test DEMO software;

Provide a full set of SDK documents, codes and other files for integration, development languages C + +, C#, and Java source codes

Support TCP, UDP and HTTP communication protocols

The default server IP of the access board is 192.168.1.253; Port: 18887

# wiring diagram：

