



# User Manual

# SR20NB

Mobile(Android, iPhone)

NFC/BLE Reader



# Table of Contents

1. Precautions for safety .....	3
2. General.....	5
3. Features .....	5
4. Specification .....	6
5. Supplied Parts .....	7
6. Product installation .....	8
7. Wire connection to controller .....	9
8. Product wiring diagram .....	10
9. How to use .....	11
10. Output format.....	12
11.FCC Registration.....	13
12. Product Manual Download Information .....	14

# 1. Precautions for Safety

The description below is to keep users safe and prevent any product damage. Please thoroughly read these instructions and use the product properly.



**Danger:** This symbol indicates that incorrect handling of the product may result in serious injury or death.



**Warning:** This symbol indicates that incorrect handling of the product may result in injury or property damage



## CAUTIONS ABOUT POWER

-Please be sure to use DC12V for power. Also, securely fix the power cable to the connection terminal before use.

*Incorrect connection of power can cause fire, electric shock, and malfunction.*

- If the product emits smoke or smells, stop using the product. Unplug the product from the DC power source and contact the nearest service center.

*It may cause fire or electric shock if you continue to use it.*



## CAUTIONS ABOUT INSTALLATION

- Do not install the product in a place subject to humidity, dust (metallic dust), or splashing water (raindrops).

*There is a risk of electric shock or fire.*

-Do not install in a place where the motor is always used.

- Do not install the product in a place not meet the operating humidity and temperature specified in the specification.

*It may cause device malfunction.*

- Do not install the product with tools such as a driver in hand when power is being supplied.

*There is a risk of electric shock or damage to the device.*



#### CAUTIONS ABOUT USAGE

- Do not drop objects or give a shock to the product.
- Keep away from places with strong vibrations or places with magnets.
- Do not install in a place where the temperature is too high (above 50°C), a place where the temperature is too low (below 30°C below zero), or a place with high humidity.
- Avoid places exposed to direct sunlight or places with heat such as heaters.  
*It may cause fire or electric shock.*
- When moving the installed product, be sure to turn off the power before moving or reinstalling.  
*It may cause fire or electric shock.*

#### USAGE MANAGEMENT

- Make sure that people other than the administrator do not touch it for other than normal use.  
*It may cause device malfunction.*
- Do not change the wiring arbitrarily after installed by a professional installation and repair technician.  
*There is a risk of fire and damage to the device.*
- Do not use flammable sprays or flammable substances nearby.  
*There is a risk of fire and explosion.*

#### CLEANING MANAGEMENT

- When cleaning, do not spray water directly on any part of the product.  
*It may cause fire or electric shock.*
- Wipe the surface of the product lightly with a dry towel. Do not use chemical cleaners or detergents, it will cause the paint to peel off.

## 2. General

---

The SR20NB is a mobile card reader that uses NFC/BLE for access control for Android and iPhone.

It offers a fast and secure user experience by enabling quick service and adopting a high encryption/decryption algorithm for data transmission and reception.

SR20NB is a product designed to be easily attached to a door frame or wall and provides a reading distance of up to 4cm. It provides three colors: Blue, Red, and Green for LED and ensures reliable and correct operation with Piezo Buzzer.

## 3. Features

---

- Android 5.0(API level 23) or higher NFC/BLE-equipped terminal, NFC function of iPhone 7 or higher terminal perform access control function(Exceptions by models and manufacturers)
- Supported cards: Android NFC/BLE,, iPhone NFC/BLE, ISO/IEC 14443 A and B,
- Output format: 34bit/26bit Wiegand output, RS485 output
- 1ch Exit Button control, 1ch relay control(optional)
- Easy to install on door frames and walls
- LED/Buzzer control
- 3-colored LED
- Compatible Controller: iCON100, iTDC, iMDC, iFDC, iEDC, IDTECK standalone controller,  
Party controller

## 4. Specification

Model	SR20NB
CPU	32bit ARM coretex Microprocessor
Frequency	13.56Mhz: ISO 14443A/14443B/15693/18092 (NFC) 2.4Ghz : Bluetooth(BLE, V4.0)
Mobile Certification	Android 5.0 or higher NFC-equipped terminal iPhone7 or higher terminal
Reading distance	Up to 4.0 cm
Reading time	Card: 0.3Sec Android: 0.6 Sec iPhone: 1.0 Sec
Power / Current	DC 12V / Max.300mA
Input Port	2ch(2chLED control port,1chBuzzer control port)
Output Port	1ch Relay control(optional)
Interface	26bit/34bit Wiegand, RS485
LED Indicator	3ColorLED (Red, Green, and Blue)
Buzzer	Piezo Buzzer
Operating Temperature	-20° ~+55°C (-4° ~+131°F)
Operating Humidity	10%~90% relative humidity non-condensing
Color/Material	Dark Pearl Gray and Glossy Black/ Polycarbonate
Dimension (W x H xT)	W: 51mm x H: 128mm x D: 25mm
Waterproof & Dustproof	IP66

## 5. Supplied Parts

---

Please unpack and check the contents of the box



**Reader Module**  
(1ea)



**Bezel**  
(1ea)



**Manual**  
(1 copy)



**3.5\*40Screw**  
(2ea)



**6.0\*30 Anchor Bolt**  
(2ea)



## 6. Product installation

### 6-1. Mullion/Wall Mount

Two holes (6-32 or M3) are 6cm apart vertically.

One hole is where the reader wires come out and it is located 2.5cm from the top hole.

(If it is already installed, this process can be skipped)

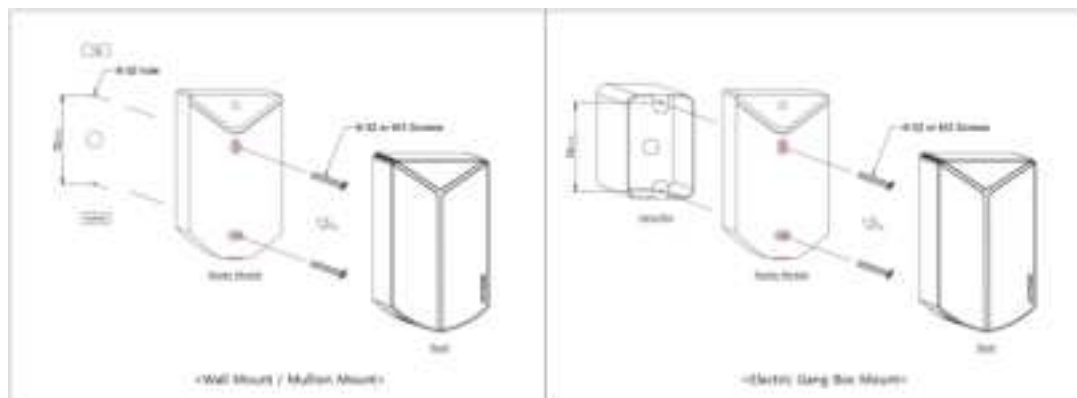
**6-2.** Put the leader cable to the center of the hole and fix the module with 6-32 or M3 screws.

**6-3.** Insert the reader module into the bezel and push until you hear a 'click' sound.

### 6-4. Installation Precautions

The reading distance may be reduced if two or more readers are installed side by side or back to back. Also, when a card is brought close to one reader, the card can be recognized by other readers at the same time.

To prevent the above phenomenon, the distance between the two readers should be installed over 20cm.

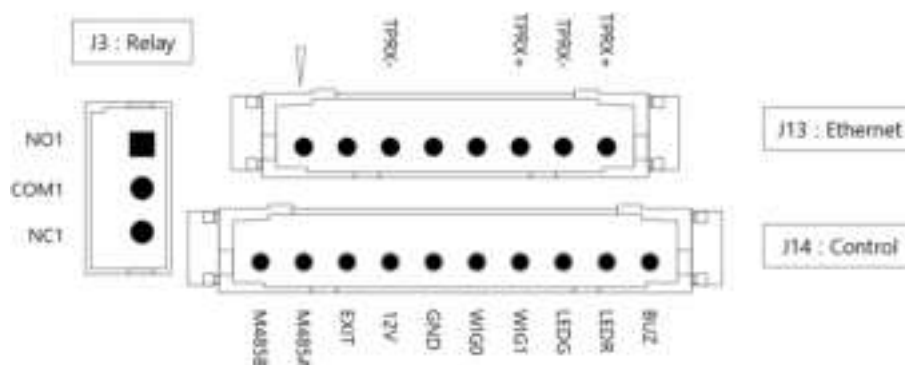
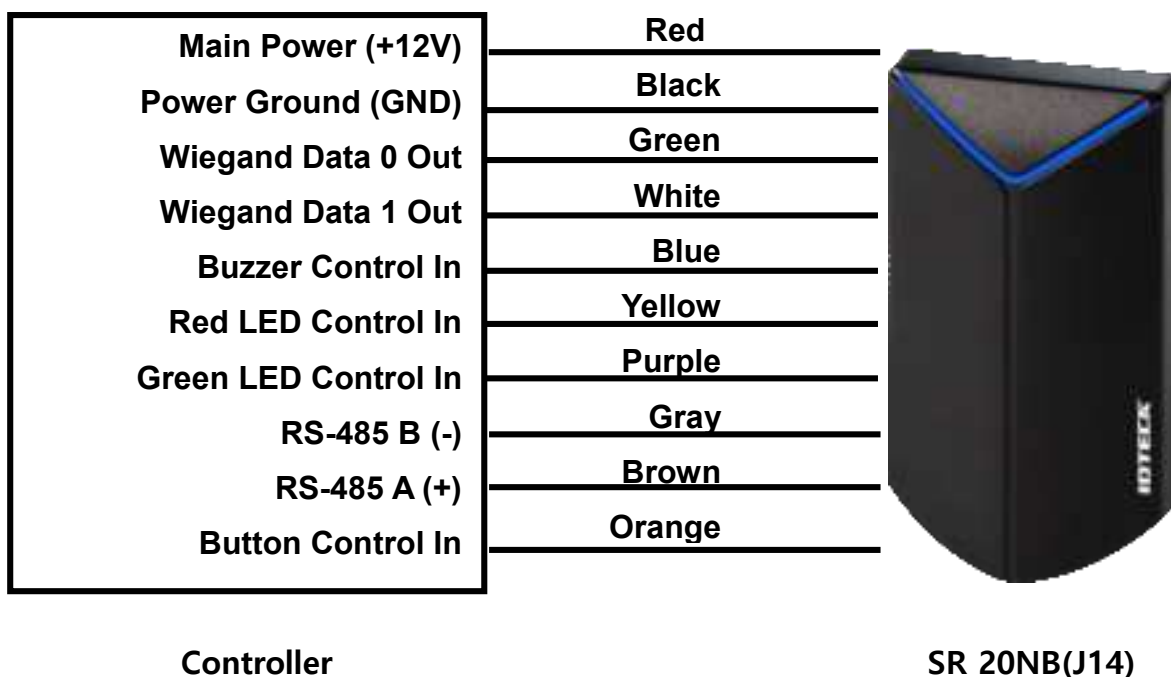


## 7. Wiring Color Table

---

Signal	COLOR
Main Power (DC+12V)	Red
Main Power (DC Ground)	Black
Wiegand Data 0 Out	Green
Wiegand Data 1 Out	White
Buzzer Control In	Blue
Red LED Control In	Yellow
Green LED Control In	Purple
RS-485 A (+)	Brown
RS-485 B (-)	Grey
EXIT(Button) Control In	Orange

## 8. Wire Connection to Controller



## 9. How to use

---

9-1. After supplying power to the SR 20NB, The LED will display red, green, and blue in sequence, and blue light is turned on and the reader goes into standby when everything is ready

### 9-2. Operating state

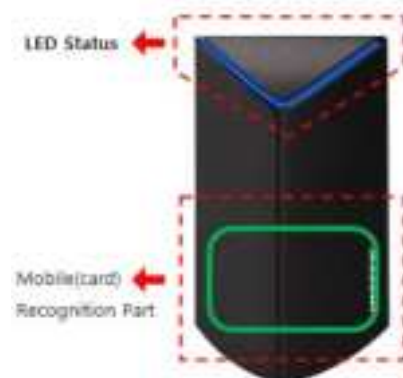
- Present a mobile (Card) close to the product until the LED turns blue to green and a buzzer sounds.
- The reader will send mobile (Card) ID data to the controller and go to standby again (blue LED) for the next reading.
- The buzzer will sound and the LED will turn red if there is a problem with the mobile or card data. In this case, it will not send data from the mobile (card) turn on the blue LED, and return to standby for the next reading.

### 9-3 LED Control

- The LED colors can be changed by connecting the LED control input to the controller.
- When the card is closed to the reader, the LED will turn into a control color and go blue for the next reading

### 9-4 NFC Tagging

- For Android device, NFC antenna area is located on the middle of the back of the device
- For iPhone device, NFC antenna area is located on the top of the back of the device.
- The NFC antenna area may vary by models and manufacturers. The reading distance may change according to the way of contacting to recognition part of the reader.



## 10. Output Format

### 10-1. Wiegand output format

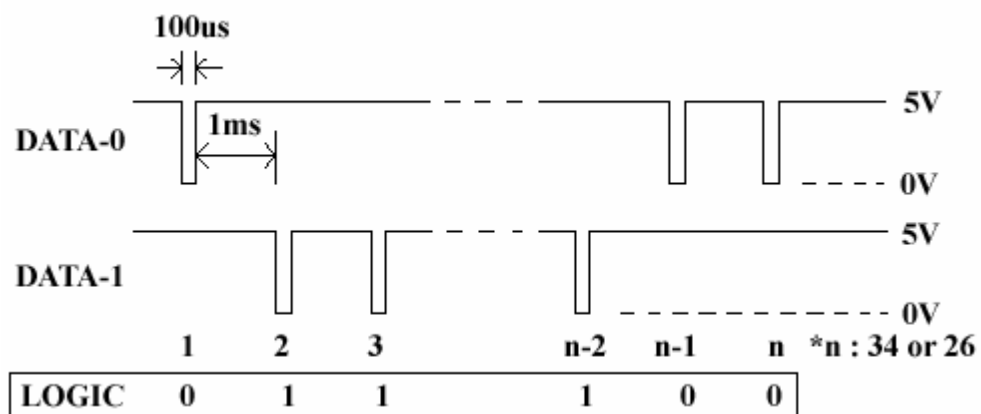
Data format (34-bit)

Bit 1: Even parity bits: Bit 2 to Bit 17, 4-byte ID number

Bit 34: Odd parity bits: Bit18 to Bit 33

Bit 2 to Bit33 : 4-byte ID number

Timing diagram



## 11. FCC Registration

---

### **FCC Compliance Statement**

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### **Modifications:**

Any modifications made to this device that are not approved by IDTECK may void the authority granted to the user by the FCC to operate this equipment.

**Note:** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

This equipment complies with FCC RF exposure requirements set forth in an uncontrolled environment and can be used without any restriction.

The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter, except in accordance with FCC multi-transmitter product procedures

## 12. Product Manual Download Information

---

This Quick Installation Guide is designed only to provide information on the basic installation of the product, and the manual describing all the functions of the product can be found on the website by following the procedure below.

If you are a member of our website

1. Access the homepage of IDTECK([www.idteck.com](http://www.idteck.com))
2. Sign in at the top of the homepage, enter your ID (email) and P/W, and log in.
3. Select PRODUCT on the main screen of the homepage and select the product you want to download.
4. At the bottom of the selected product screen. Select "DOWNLOAD to download the manual.

If you are not a member of our website

1. Access the homepage of IDTECK([www.idteck.com](http://www.idteck.com))
2. Please select Member Join at the top of the homepage and request membership registration according to the procedure.
3. Member ID/PW can be used after approval by the website manager.  
Please follow the procedure : [If you are a member of our website]

If you have any questions or encounter any issues, please contact us below.

- ◆ The label is located at the center of the bezel inside the reader module

### IDTECK Headquarters/Sales Headquarters

[Head office] #605, GongHangDaeRo 228, GangSeo-Ku, Seoul, Korea (Zip : 07806)

[Sales Headquarters] 4F, 61, Samjak-ro 171 beon-gil, Bucheon-si, Gyeonggi-do, 14453, Korea (ZIP 14453)

Tel: +82 2 2659 0055

Fax: +82 2 2659 0086

E-mail: [webmaster@idteck.com](mailto:webmaster@idteck.com)

Website: [www.idteck.com](http://www.idteck.com)



**The above manual is subject to change depending on circumstances.**

4F, 61, Samjak-ro 171 beon-gil, Bucheon-si, Gyeonggi-do, 14453, Korea

Tel : +82-2-2659-0055

Fax: +82-2-2659-0086

E-mail: [webmaster@idteck.com](mailto:webmaster@idteck.com)