TinySine

TOSR-10B/C

LazyBone V5

Smartphone Controlled Switch

User Manual

INTRODUCTION

LazyBone is smart switch controlled by our phones via Bluetooth or WiFi, supporting both Android and iOS. It's a convenient and easy-to-use product that can be used to control your home's electrical equipment, such as light bulbs. By using the momentary mode, you can even control your garage door! Compared to the previous LazyBone switch, the LazyBone V5 offers a number of improvements. It's can be set to with password protection. So, you can use it to control your garage-door or any other devices that need a password protection.

SPECIFICATIONS

- Supply voltage: AC(110~240V)/DC 5V-12V*
- Standby Current 30mA/5VDC
- Dimension :80x49x31(mm)
- Relay switching power: 10A/250VAC
- Communication mode: Bluetooth/WiFi
- Baud rate: 9600
- Control distance: 25m (outdoor with Bluetooth version)
- Support Android: above V4.3
- Support iPhone: above iPhone5
- Support password protection
- Default password: 123456

*If you just want to use it as a switch, you need supply the module with DC5V power

IMPORTANT DISCLAIMER

Using this device may require you to connect the civil high AC power (110~240v). Please leave the device uncharged when you are wiring. Additionally, if something wrong has happened with the device and you want to check it, please disconnect the power first. Any incorrect wiring or shorts on the board can potentially cause damage to the controller itself. Extreme care must be taken when using this device to avoid any damage to your equipment. In particular, make sure you always disconnect the device from the DC5V port as well as any other power source when working on the device. Never touch the power input and output ports without protective measures when the device is working.

Tinysine Electronics, its shareholders, employees, suppliers, distributors and/or resellers are not liable for any damage or loss of data as a result of the use of this device, including special, incidental or consequential damages resulting from the use of this device, or under any legal theory, including lost profits, downtime, good will, damage to or replacement of equipment or property, and any costs or recovering or reproducing of data stored on computers connected to this device. Your use of this circuit indicates your acceptance of these terms.

Module Overview
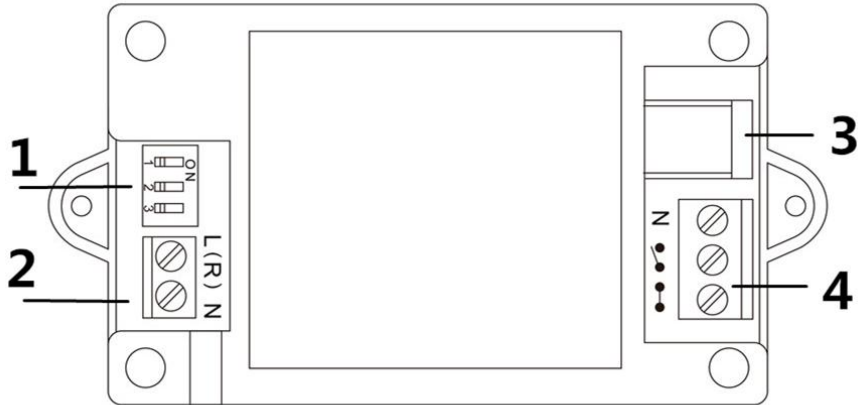
1. Setting Switch

LazyBone V5 has 3 setting switches: **AP**, **P/R**, **P/E**.

- **AP**: WiFi AP mode ON/OFF

This is for WiFi version use only. You can configure the WiFi module or control it point-to-point in AP mode.

- **P/R**: Password reset.

Power off LazyBone, set the **P/R** switch to position **ON**, then re-power LazyBone. Set **P/R** back to **OFF**, wait for 3 seconds, the password will be reset to default password 123456.

- **P/E**: Password enable/disable.

This switch is used to enable/disable LazyBone's password function. Set to "**ON**", enable the password; set to "**OFF**", disable the password, this operation needs you to re-power the board.

2. AC Input Port: AC power input. Working voltage AC100~240V.

3. DC Input Port: DC 5V-12V Input.

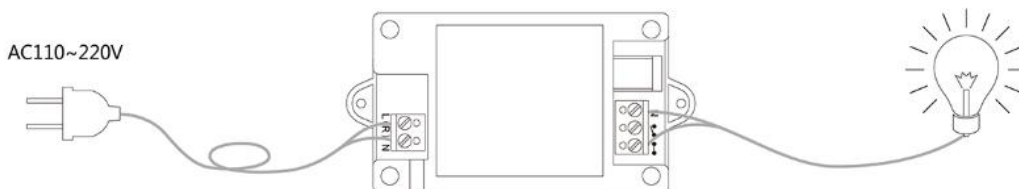**4. Output Port**: Connect your electrical equipment to this port.

Commands

We have provided a very simple command set for developers to develop their own application. The LazyBone operates with an easy to use command set as described in the table below.

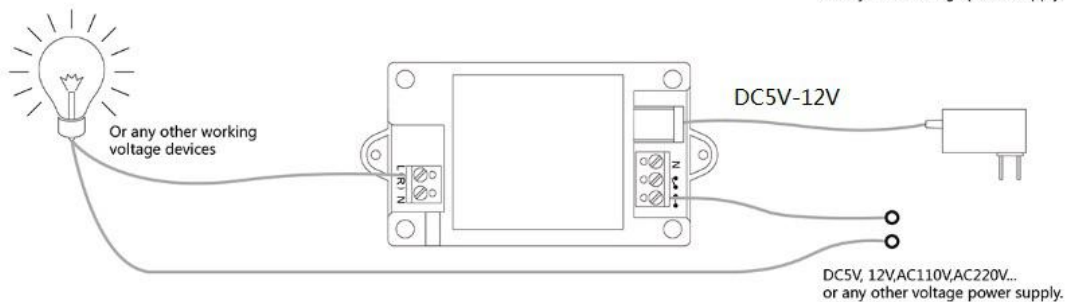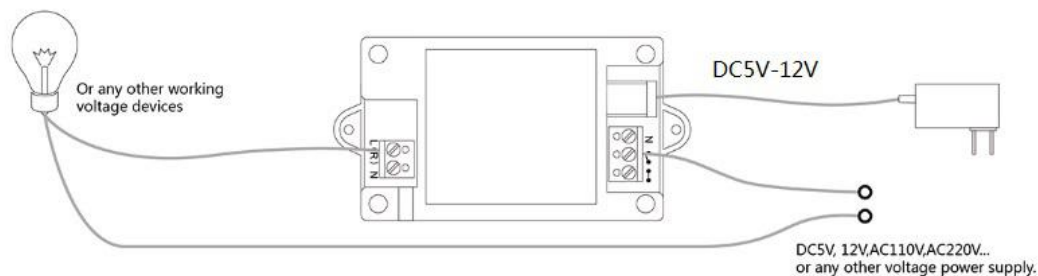| Command			Action
doc	hex	ASCII	
60	3C	<	Get the P/E state, returns 1 byte, 0x11 - password enabled, 0x10 - password disabled
63	3F	?	Verify the password, followed by 3 bytes password, returns 1 byte, 0x01 - password correct and 0x00 - password incorrect
64	40	@	Set password, followed by 3 bytes new password
90	5A	Z	Get software version - returns 2 bytes, the first byte being the Module ID which is 15, followed by the software version
91	5B	[	Get relay states - send a single byte back to the controller, bit high meaning the corresponding relay is in position 1
99	63	c	Relay Momentary Output - 0x63 + pulse (0x00~0xFF) Example: 0x63 0x05, Pulse output 500ms
101	65	e	Relay to position 1
111	6F	o	Relay to position 0

How to Use

## Wiring Diagram：

Self-power mode

AC110~220V

AC110~220V

Wireless switch mode

Or any other working
voltage devices

DC5V-12V

DC5V, 12V,AC110V,AC220V...
or any other voltage power supply.

Or any other working
voltage devices

DC5V-12V

DC5V, 12V,AC110V,AC220V...
or any other voltage power supply.

Step 1: Wiring

In this manual, we use self-power mode to demonstrate.

First, you will need a wire that has a two-pin plug and a bulb with two polar ends that has been leaded like we have shown below.
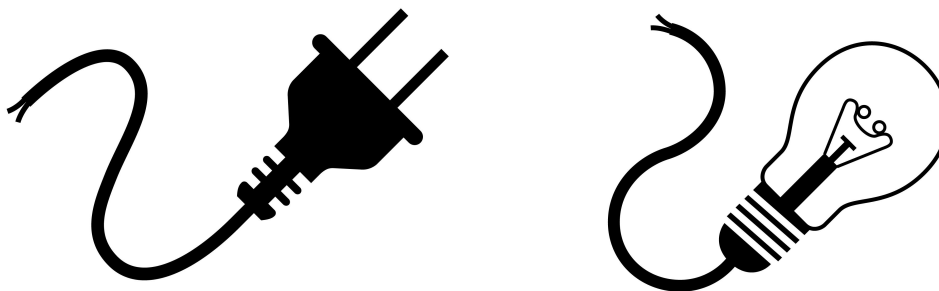
Connect the wire to LazyBone's AC input port: connect the live wire to the 'L' port and the zero line to the 'N' port.

The output has three ports. The one named "N" is a common port; please wire one polar end of the bulb to this port. The other two ports have an opened switch and closed switch logo respectively. The opened switch port is normal OFF, The another one is normal ON. (Please do this with the wire, bulb and LazyBone powered off to keep you safe!)

Finally, connect the 2 pin plug to AC power, and the red LED light near the AC input port will lights up. This step works for all versions of LazyBone!
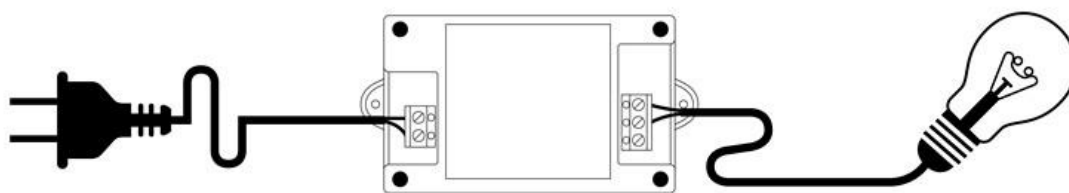
Step 2: Connect LazyBone with your Smartphone

Bluetooth Lazybone
LazyBone V5 (Bluetooth version) uses Bluetooth BLE instead of the traditional Bluetooth module. LazyBone V5 can be controlled by both Android phones and iOS devices!

1. Connect with phones
(1) Download Android APP (Bluetooth) or iPhone APP(Bluetooth) and install it to your

phone.

(2) Turn on your phone's Bluetooth and open the APP.

(3) Click the screen to pop out the menu → Connect device → Scan for devices. Your phone will search for nearby Bluetooth device automatically. LazyBone usually comes with a default name: **LazyBone-B**.

(4) Click "**LazyBone-B**" to connect it, if your phone has connected to LazyBone successfully, the interface will show words "**Connected: LazyBone-B**" at the top.

Note:

If you have enabled LazyBone V5's password function, you need to verify the password before you can control it. Default password is 123456.

WiFi Lazybone

LazyBone V5 (WiFi version) has a WiFiBee WiFi module in it. You need to configure the WiFi module before you use it.

Here we have two ways to configure your LazyBone:

1. Use the LazyBone APP configure it.

(1) Download Android APP(WiFi Version) or iPhone APP(WiFi Version) and install it to your phone.

(2) Disconnect LazyBone from power, set **AP** to position "**ON**", then power your LazyBone again.

(3) LazyBone will create an AP network automatically. Turn on your phone's WiFi, you will find a network named as "**WiFly-EZX-XX**", it's an open network that does not need a pass phrase or pass key(**XX** stands for the last two characters of WiFi module's MAC address).
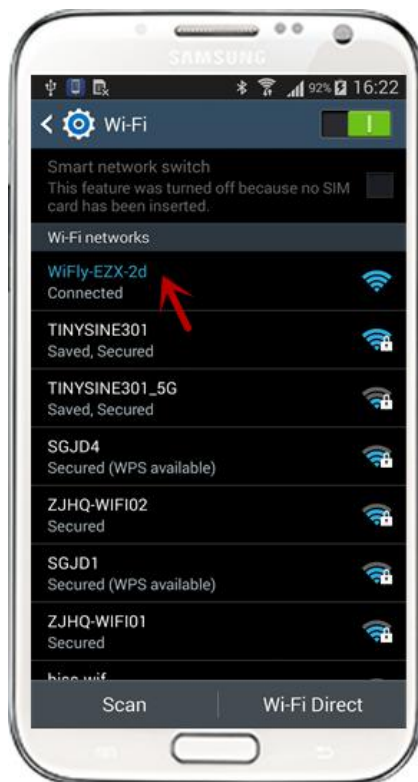
(4) Before configure LazyBone, you can control LazyBone point to point to check whether the connection is good!

(5) Open the APP, click your phone's screen to pop out the menu → Connect device → Add new devices, input IP address: **192.168.1.1,** port number: **2000**. When you see the words "**Connected: xxx**", you will be able to control the LazyBone now!

Note:
If you have enabled LazyBone's password, you still need to verify the password at first.

(6) Once you have tested the connection is good, you can start the configuration now. Exit the app and restart it, click "**Configure**" then input your wireless network's settings step by step, just like SSID, password, and assign a proper IP address.
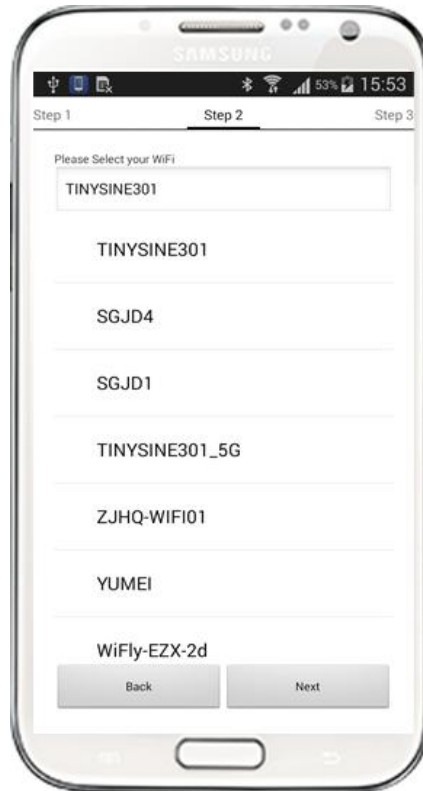
(7) click "**Start**", app will send commands to LazyBone automatically. When app shows "Configuration is complete", exit the APP and the configuration are finished.

(7) Power off your LazyBone and set **AP** back to "**OFF**", then re-power the board. Remember to connect your phone to the network you have set for LazyBone.
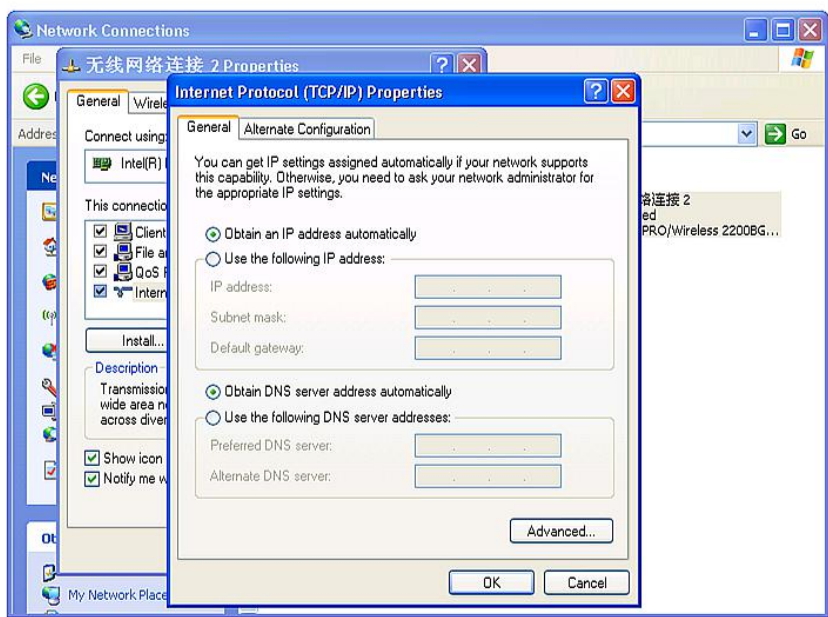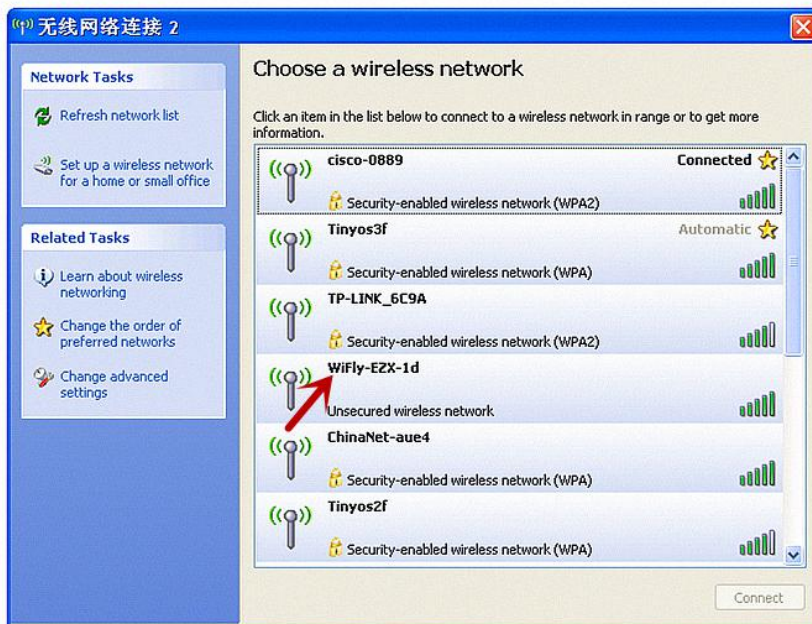
2. Configure with commads directly.

(1) Make sure you have set LazyBone's **AP** to position "**ON**". And power up your Lazybone.

(2) Set your computer to obtain IP address automatically and open the network list. You should see a wireless network named **Wifly-EZX-XX**, click it to connect.

NOTE: It may take a while for Windows to connect to the network and assign an IP address. You can check the IP address of your computer by running the ipconfig command in the command window. Once connected, this command will show you the IP address and net mask.

The IP address assigned by Auto IP must be on the subnet 192.168.1.x, otherwise the LazyBone's WiFi module will not be accessible.
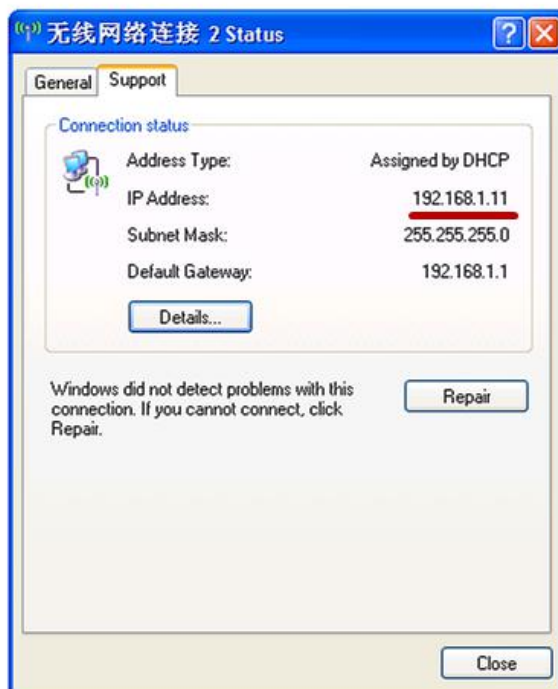

If your computer has both wireless and wired interface hardware, please disable the wired

LAN interface hardware before connecting to the AP network, or the computer may assign an IP address that is not on the same subnet as the WiFi module.

(3) Run Hyper Terminal and create a new connection. Set Host address to **192.168.1.1**, Port number is **2000**.
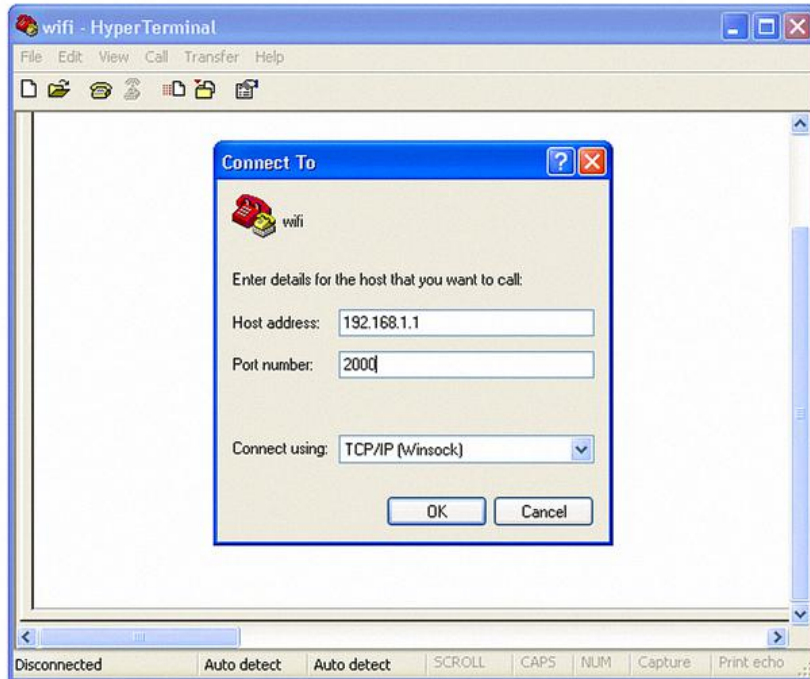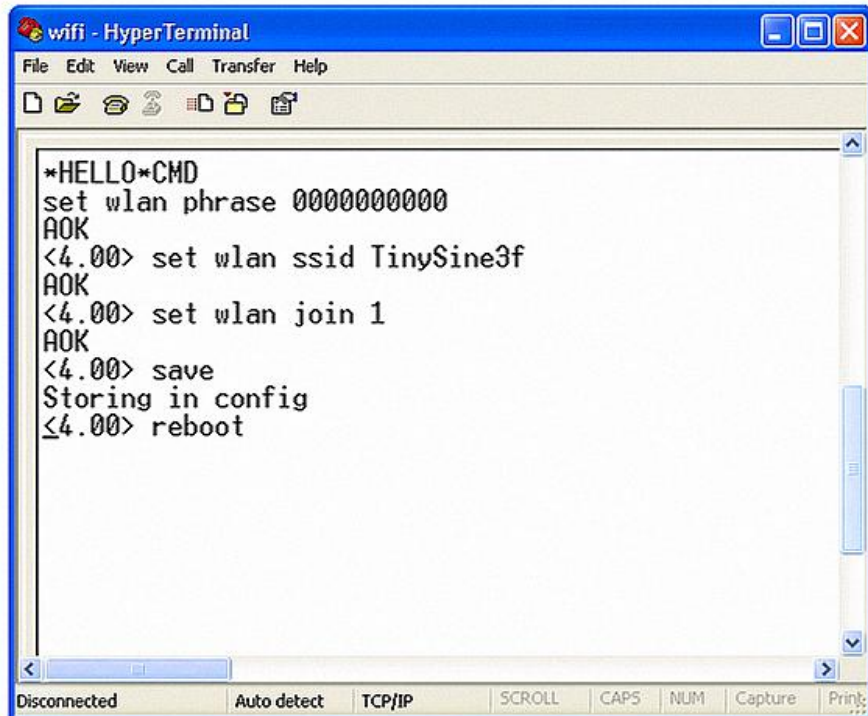

(4) Once connected with a proper IP address, you should get the response ***HELLO***. Input escape sequence **$$$** to make the WiFi module enter commands mode, and Hyper Terminal should returns **CMD** to you.
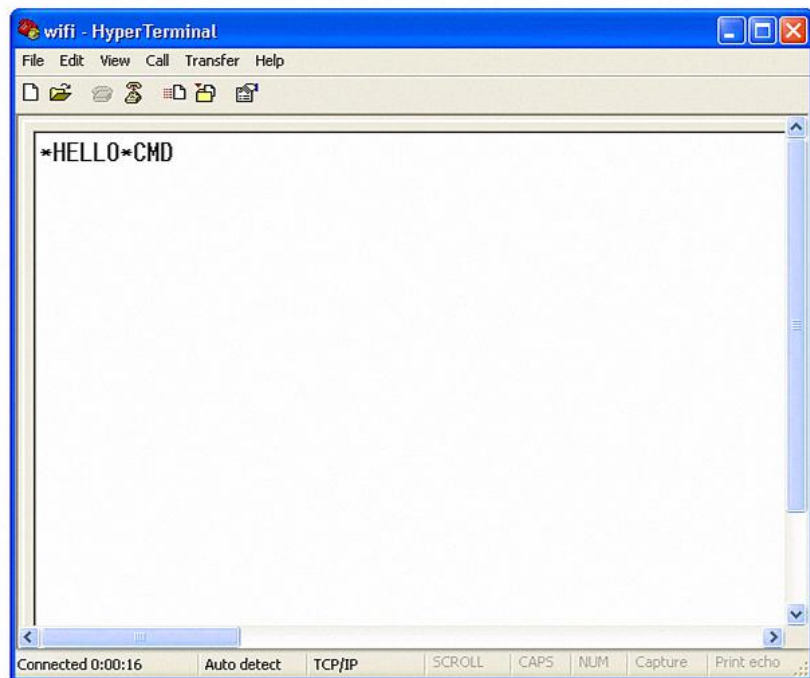
(5) Now you can setup WiFi module's settings. Input every command on your keyboard, and click the **Enter** button after each command to send. The Hyper Terminal should return **AOK**.
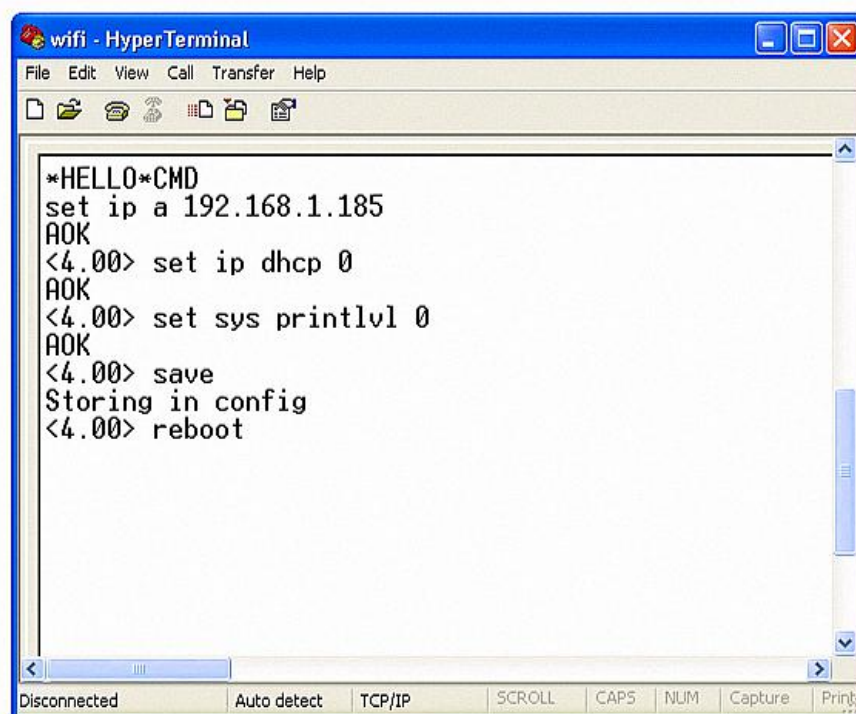
set wlan phrase <your WPA password>
set wlan ssid <your network ssid>
set wlan join 1
save

If you want a fixed IP address, please use these commands below:
set ip a <your IP address>
set ip dhcp 0
set sys printlvl 0
save
reboot

Here we set IP address to 192.168.3.185 for demo purposes.

(6) When the configuration has finished, close Hyper Terminal, disconnect LazyBone from its power, change **AP** back to "**OFF**", and re-power LazyBone again.

2. Connect LazyBone to Android phone/iPhone

(1) Open the app, click **Connect Device** to **Add new devices**. Input the configuration information as we have set before. You can input a name for LazyBone in the first line. The second line is the module's IP address, which in our case we write 192.168.3.185, and the third is the port, which we set to **2000**, then click "**ok**".

(2)When you see the words "**Connected: LazyBone**", it means our phone has connected to LazyBone, and you can use LazyBone to turn your bulb on or off!

Step 3: Control your Bulb

Normal mode

Once your phone has connected to LazyBone, click the button in the middle to activate the bulb, and the button will become blue at the same time. Click it again to deactivate the bulb.
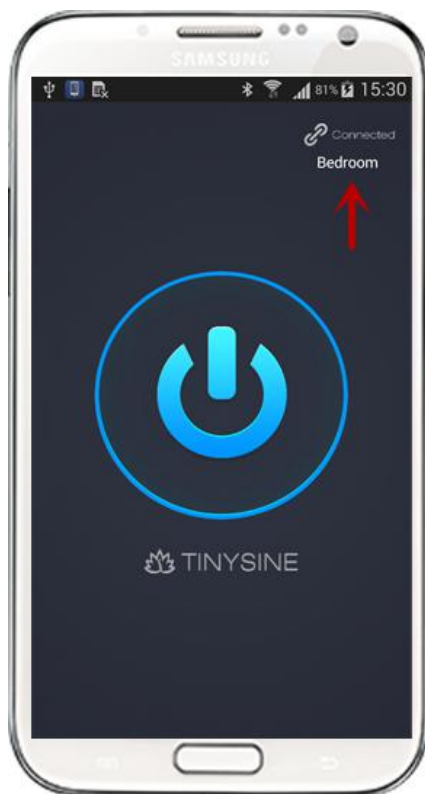

Advanced Features:

● **Rename your device**

If you have multi LazyBones, you can rename it for each device. Just click the words "LazyBone-B" then input a new name for your LazyBone. This name is stored in your phone, when you search for the same device next time, it will appears with the new name.
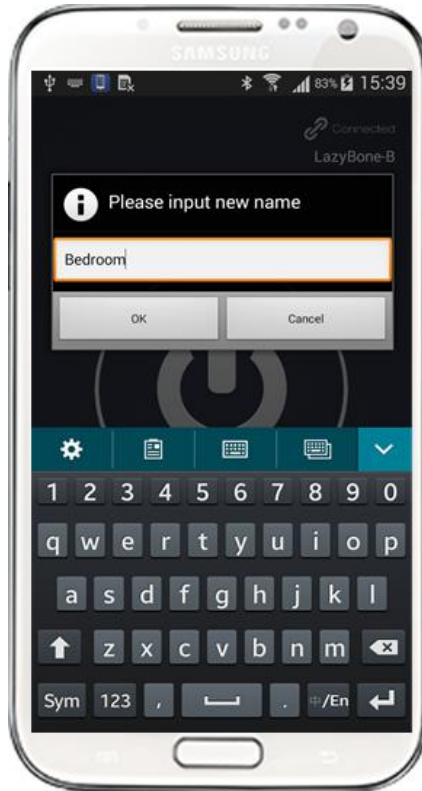
- **Pulse output**

LazyBone will have a pulse output when you turn on the momentary mode. You can set the pulse time from 100ms to 20s. In momentary mode, when you click the main main button. The relay will turn on and hold on a while then release.

● **Auto Disconnect**

Lazybone can only be controlled by one phone at one time. If you turn on the auto disconnect, The APP will disconnect the connection after a while no actions. So the other people can connect and control it.

● **Change password**

If you have enabled LazyBone's password function, you will find a option in menu named as "Change Password". Choose this option to change the default password, the password can only be 6 digits, and new password will works when you connect with LazyBone next time.
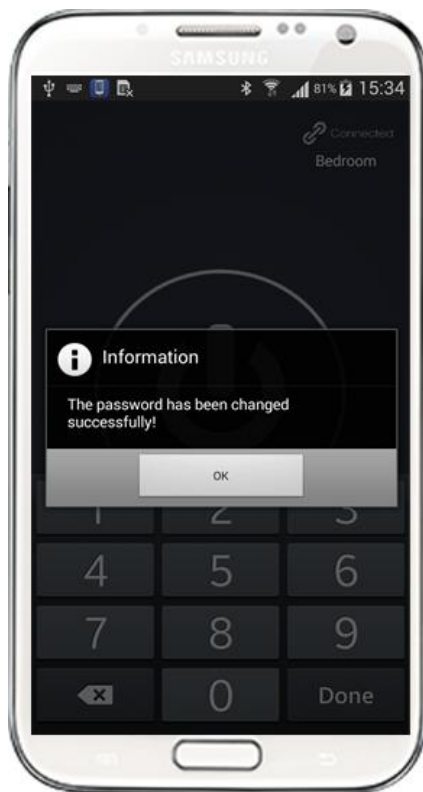
Note:

If you forget the password, just reset it to default settings.

(1)Power off LazyBone, change the second switch named as "**P/R**" to position **ON**, then re-power LazyBone.

(2)Set **P/R** back to **OFF**, wait for seconds, the password will be reset to default password 123456.

● **Control LazyBone (WiFi version) via internet.**

For this feature, please view the **APPENDIX-3**, where we discuss more details.

We've now covered how to use LazyBone to control a bulb, and you can also use it to control other electrical equipment or your garage-door. We hope LazyBone can bring convenience and ease to your life. If you have any problems or suggestions, please do let us know!

NOTICE

1. Make sure your wire is strong enough to bear high voltage and that the electrical equipment is certified as reliable and secure.

2. Keep your device uncharged when wiring or checking for problems. Never try to touch the power input and/or output ports when powered, as this can be extremely dangerous! Take extra precaution if you have to examine the power input or output ports.

3. Keep your device working in a dry environment, and never pour liquid on the device. This device doesn't have waterproof performance.

4. Don't open the shell of the device or leave the circuit board exposed when working.

5. Keep your kids or pets away from this device.

APPENDIX

1. GL5A Relay Datasheet
2. RN171 WiFi Module Datasheet
3. Control WiFi LazyBone via Internet

Contact us

Address:

Tinysine Electronics

10-301,Shen Gang Cheng, Xiang Zhang Road, Hefei, Anhui, China

Tel:

+86-551-65365921 Ext 801

Fax:

+86-551-65365931

Email: customerservice@tinyosshop.com