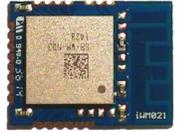


iWM021 Quick Start Guide

Description

This guide is used to help user to set up and work with iWM021 properly. iWM021 is a standalone serial WiFi module with embedded TCP/IP. You just need to connect your system/device/asset to iWM021 through UART and then use provided web interface to manage your connection. Thus, it can be used to enable wireless connectivity to the simplest existing products with minimal engineering effort.



Basic

In iWM021, three modes are supported, Access Point mode(AP mode), Station mode, and Dual mode. In AP mode, it acts like a simple AP supporting DHCP. In Station mode, it is a client device waiting for joining other AP. **Please note that iWM021 only support 20MHz channel bandwidth. Please make sure the channel bandwidth of your AP is set as 20MHz.** In Dual mode, it is an AP and also a client device.

One multi-function button is used to act WPS and reset to default settings. Below is how it functions.

Function	Mode	Trigger Condition
WPS	Station or Dual	short press for over 1sec
Reset to default settings	Any	long press for over 5 sec

Build Connection



In AP or Dual Mode

iWM021 is in Access Point(AP) mode defaultly. It's name is just like above figure with part of the mac address. You can connect it by using the WiFi connection of your NB/PC/Mac/Tablet/Smartphone(In the WiFi setting, you should see the AP. Select to join it.) . The default key to connect with it is "12345678". You can change it later when you get into the web UI.

In Station Mode

If iWM021 is set to Station mode, it will connect to the assigned AP(use the web UI to assign it). The device(NB/PC/Mac/Tablet/Smartphone) that want to connect with iWM021 has to connect to the same AP. That is, they have to be in the same network.

Use Web User Interface to Manage Your Connection

In AP or Dual Mode

To get into the web UI, enter **192.168.10.1** in your browser. The default account/password are both **“admin”**. You can change it later. In web UI, any change need to be saved first. After all changes made, press reboot to make the changes effective.

In Station Mode

When In Station mode, the correct IP address assigned to the device has to be discovered first. After that, you can get into the web UI by entering the assigned IP address in your browser. The other operation is the same with in AP or Dual mode.

Use WPS

When iWM021 is in Station or Dual mode, you may use WPS to connect it to your Access Point. First press the WPS button on your Access Point, then press the WPS button on the iWM021 device(the WPS button need to be pressed for over 1 sec) to join it.

Get Default Settings

In case you need to go back to the original settings, keep pressing the reset/default button in your device for over 5 sec no matter in which mode the device is. The status LED and active LED will be both turned off and when you release the button, the iWM021 will reboot to it's default settings(AP mode).

Understand the LEDs

There are two LED to help to indicate current status. One is the status(red) and the other is activity(blue). The status LED indicates the device ready or not and the activity LED indicates the communication through WiFi is happening. Below is the detail behavior in specific mode.

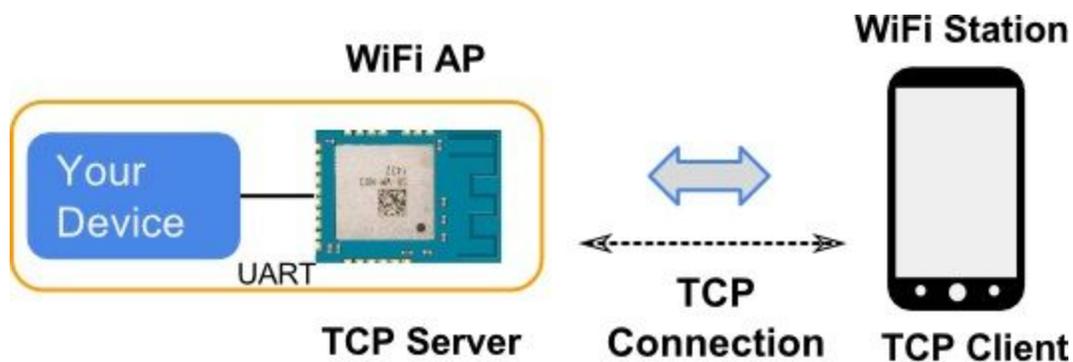
mode	LEDs	Note
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power on to ready (1)	status: off->on->off->off ->on activity:off->on->off->flash->off	
press WPS	status: flash, activity: off, then follow (1)	WPS button need to be pressed over 1 sec
reset to default settings	status and activity both off then follow (1)	reset/default button need to be pressed for over 5 sec

Example

Direct TCP connection with a smartphone

Below is a TCP connection example between iWM021 and a smartphone. From the figure below, you can see each role of iWM021 and the smartphone.

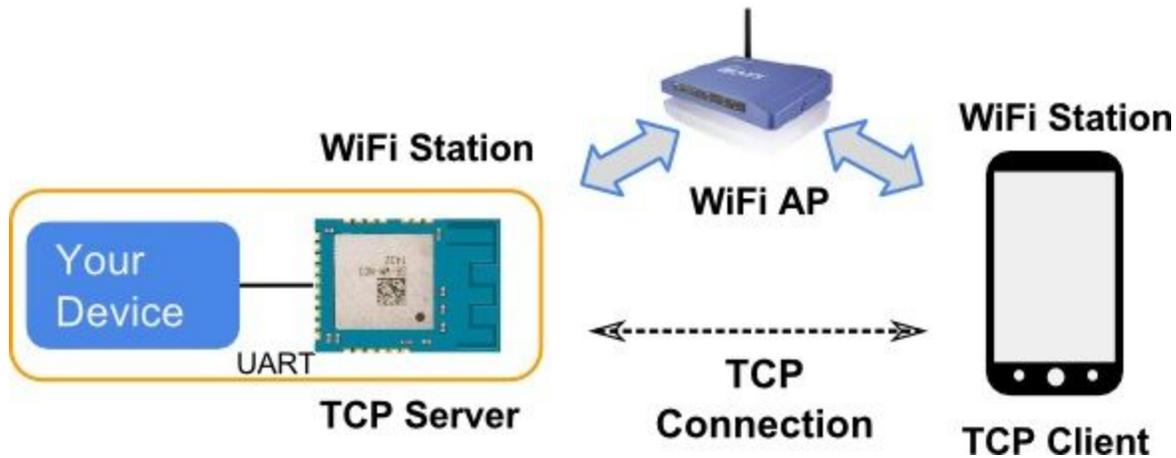


The steps for building this connection are described below.

1. Connection your device with iWM021.
2. Install an TCP terminal tools on your smartphone, like this one: "TCP UDP Terminal" on Google Play. <https://play.google.com/store/apps/details?id=nextprototypes.tcpudpterminal>
3. Power on iWM021 and use the WiFi of your smartphone to connect iWM021 AP.
4. Browse iWM021 configuration UI page at 192.168.10.1 by your smartphone. Set correct UART setting including baud rate. Save and reboot iWM021.
5. Open TCP terminal tool in your smartphone. Connect TCP server at 192.168.10.1, port 8080(the default TCP server on iWM021).
6. Now your device can communicate with TCP terminal tool in your smartphone.
7. You can also use a PC and PC terminal program(such as TeraTerm) to replace your smartphone.

TCP connection with a smartphone through your home WiFi AP

Below is another TCP connection example. Both iWM021 and the smartphone are connected to a WiFi AP. From the figure below, you can see iWM021 is a WiFi station and the TCP server. The smartphone is a WiFi station and the TCP client.



The steps are described below.

- 1-3. are same steps as above example.
4. Browse iWM021 configuration UI page at 192.168.10.1 by your smartphone. Set correct UART setting including baud rate and your WiFi AP information. Save and reboot. (Now iWM021 is a WiFi station)
5. Use the WiFi of your smartphone to connect to your WiFi AP.
6. To connect to the TCP server on iWM021, you have to find out the IP address of iWM021 first since it's IP is assigned by your WiFi AP.(an useful tool called "Fing" on Google Play can help to find out all the device's IP under the same WiFi AP)
7. Open TCP terminal tool in your smartphone. Connect TCP server at the IP you find out on Step 6, port 8080.
8. Now your device can communicate with TCP terminal tool in your smartphone.

Revision History

DATE	REVISION	CHANGES
Jan 16, 2015	1	Initial release
Feb 21, 2016	1A	Add Example section