

# WisNode-SPI EVB Quick Start Guide

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## 1. Product introduction

### 1.1 Overview

WisNode-SPI module is based on the RAK439 module design of an Arduino-compatible development board, which inherited the RAK439 the SPI interface, supporting STM32F4, STM32F1 chip can be the fastest to 8Mb / s throughput speed, used for large data communications Suitable, of course, RAK439 low-power mode will allow the module does not need to transmit data, reduce the overall power consumption, saving electricity.

### 1.2 Evaluation Kit introduction

After purchasing the Arduino WisNode-SPI EVB evaluation kit on Taobao, we will send it with the following RAK official designation.As shown in Figure 1-1.The items in the box are shown in Figure 1-2: WisNode-SPI EVB、2.4GHZ Antenna。



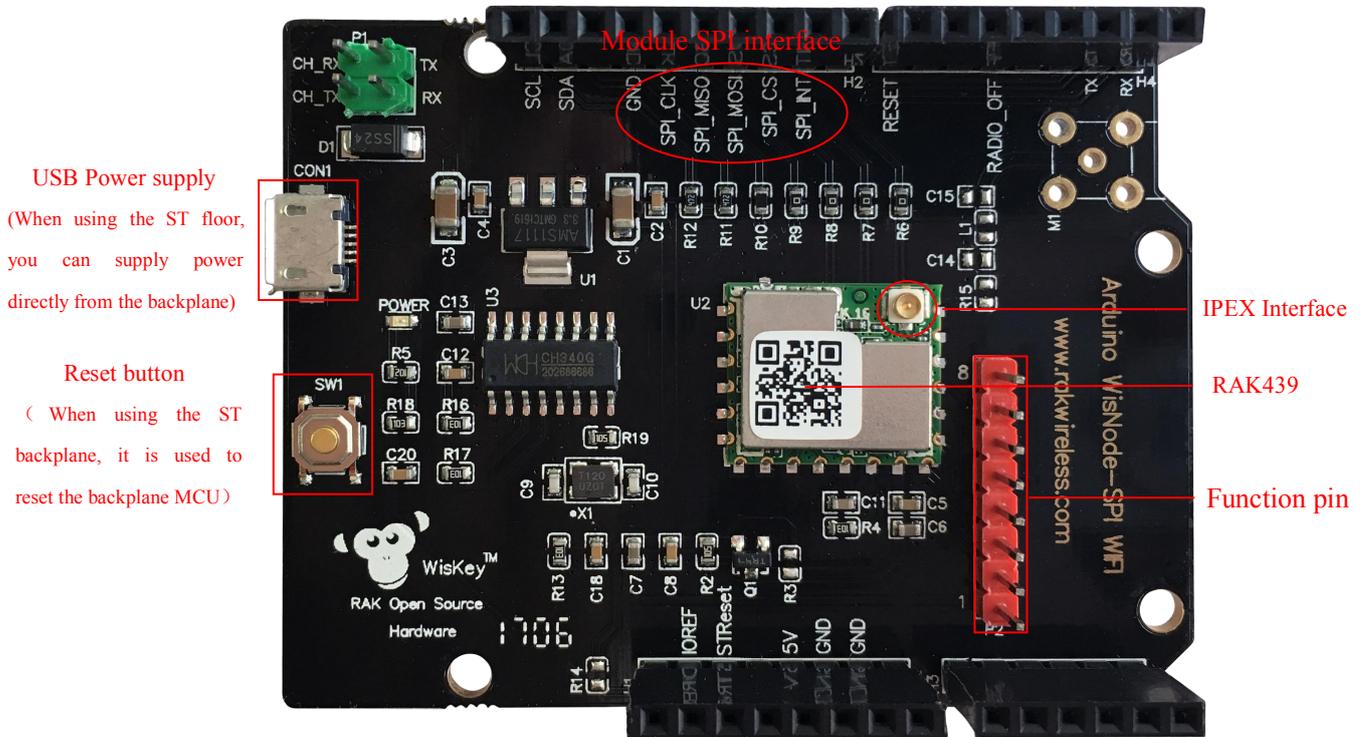
Fig 1-1



Fig 1-2

### 1.3 Hardware introduction

The following figure is the RAK WisNode series SPI development board, compatible Arduino development board, supporting STM32F411 NUCLEO-F411RE development board with the use of. Interface resources are as follows:



Function	Name	Note
Module	U2	RAK439 Module
External interface	Micro USB	Power Supply DC 5V input
Key	Reset	Reset button for the backplane STM32(spare)
Pin out	P2	Function pin ( spare)
LED Light	POWER	Power Indicator

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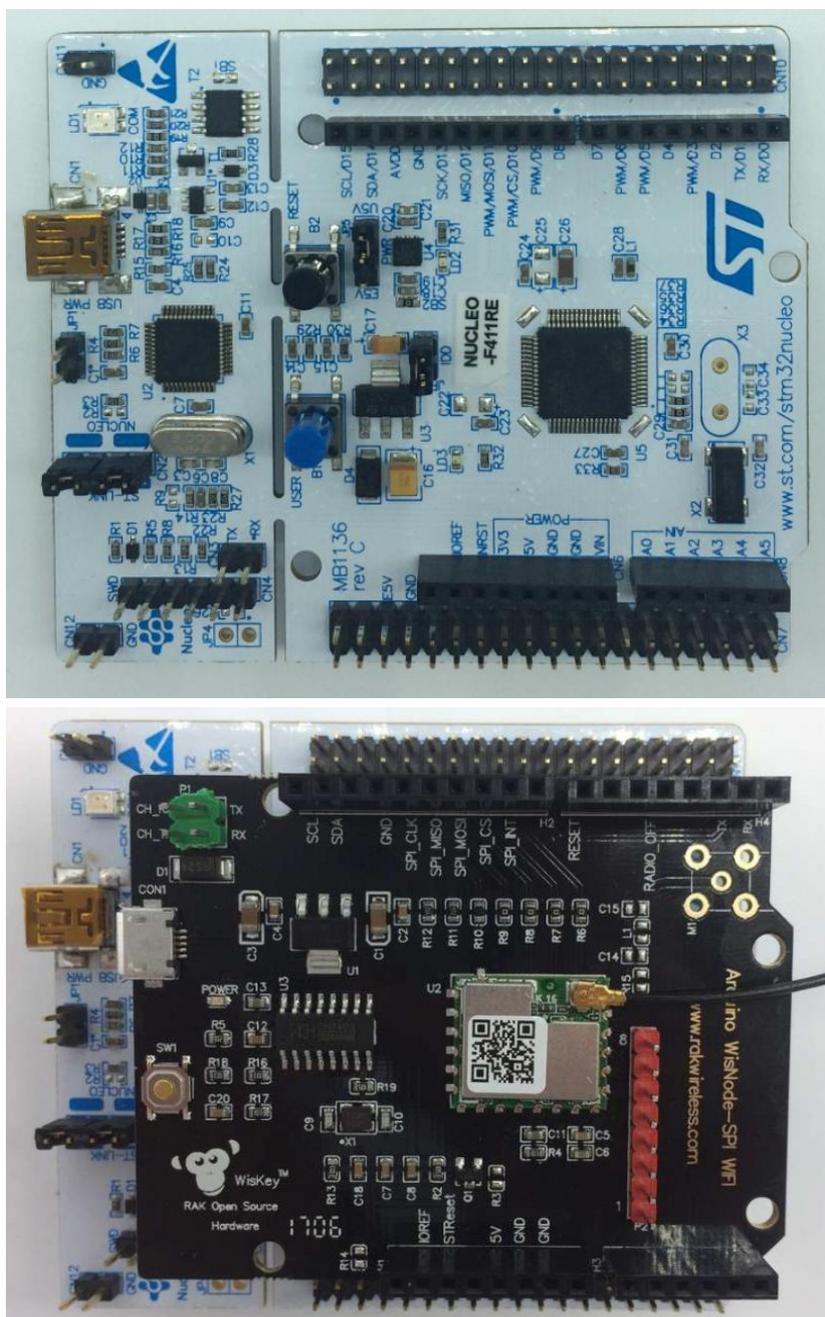
## 2. Quick to use

### 2.1 Ready to work

Here WisNode-SPI module and STM32 NUCLEO-F411RE supporting the use of the program can be used in this link to download: <https://github.com/RAKWireless/WisNode-SPI>

The required WisNode-SPI development board can be purchased at the following Taobao link: [https://www.aliexpress.com/store/product/WisNode-SPI-development-board-compatible-Arduino-board-6M-speed-low-power-fast-test-Open-Source-Hardware/2805180\\_32789744834.html?spm=2114.12010608.0.0.ddcjRT](https://www.aliexpress.com/store/product/WisNode-SPI-development-board-compatible-Arduino-board-6M-speed-low-power-fast-test-Open-Source-Hardware/2805180_32789744834.html?spm=2114.12010608.0.0.ddcjRT)

The required NUCLEO-F411RE backplane can be purchased at this Taobao link : [https://www.aliexpress.com/wholesale?catId=0&initiative\\_id=SB\\_20170220185531&SearchText=NUCLEO-F411RE](https://www.aliexpress.com/wholesale?catId=0&initiative_id=SB_20170220185531&SearchText=NUCLEO-F411RE)



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## 2.2 Example demonstration

After the preparation is complete, we have three samples at this time: development board, floor, program. This time we need to download the program to the floor. How to download? Please refer to the following steps:

1. Because our program is written using keil MDK tools, so users need to have keil MDK software, the software version of the best in 5.1 or more. Keil MDK software download link:

<http://www2.keil.com/mdk5/install>

2. Download installation completed keil MDK, also need to install ST-Link driver to drive the floor work. Drive in ST official website download.

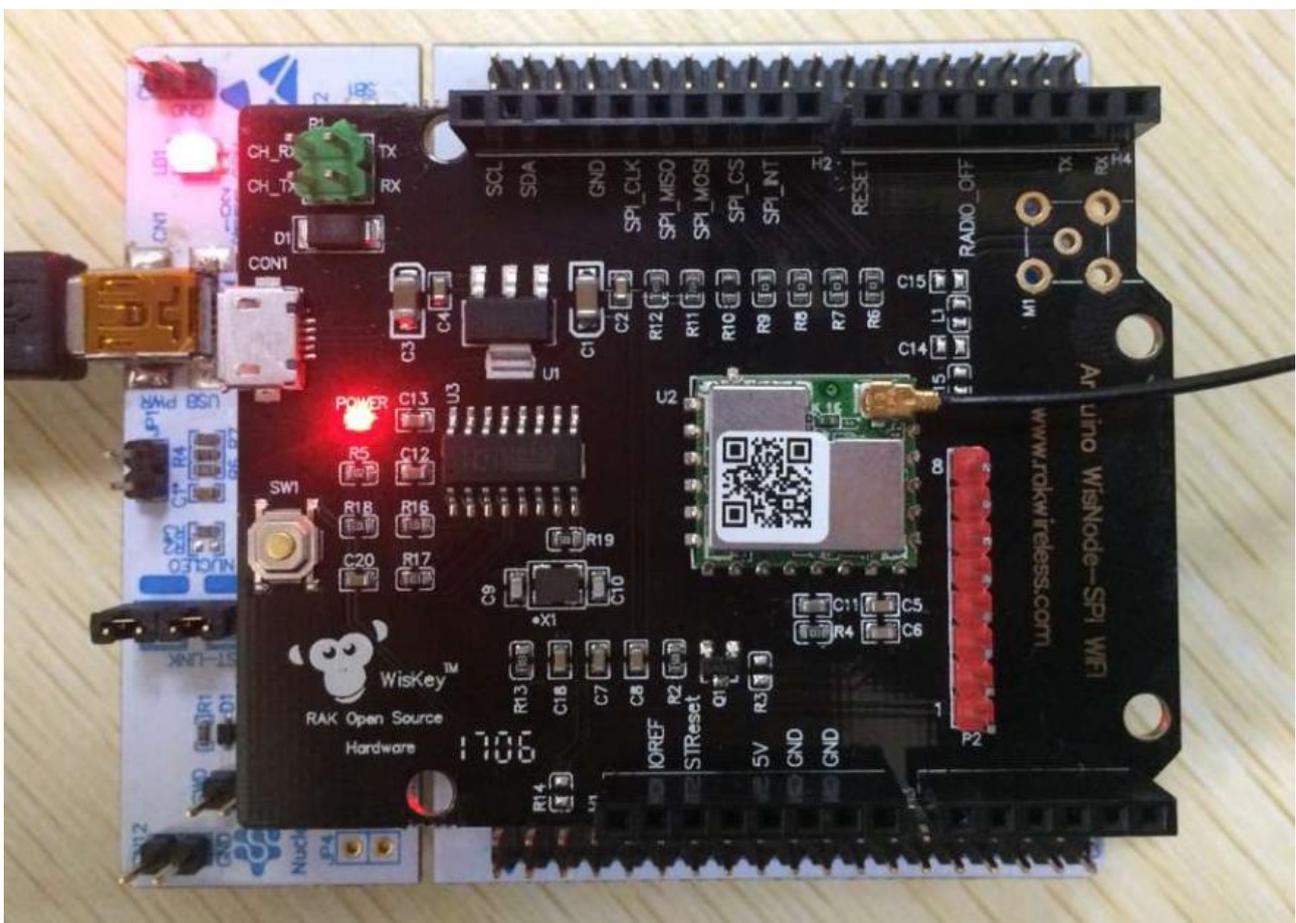
[http://www.st.com/content/st\\_com/en/products/embedded-software/development-tool-software/stsw-link009.html](http://www.st.com/content/st_com/en/products/embedded-software/development-tool-software/stsw-link009.html)

### GET SOFTWARE

Part Number	Software Version	Marketing Status	Supplier	Order from ST
STSW-LINK009	1.02	Active	ST	<a href="#">Get Software</a>

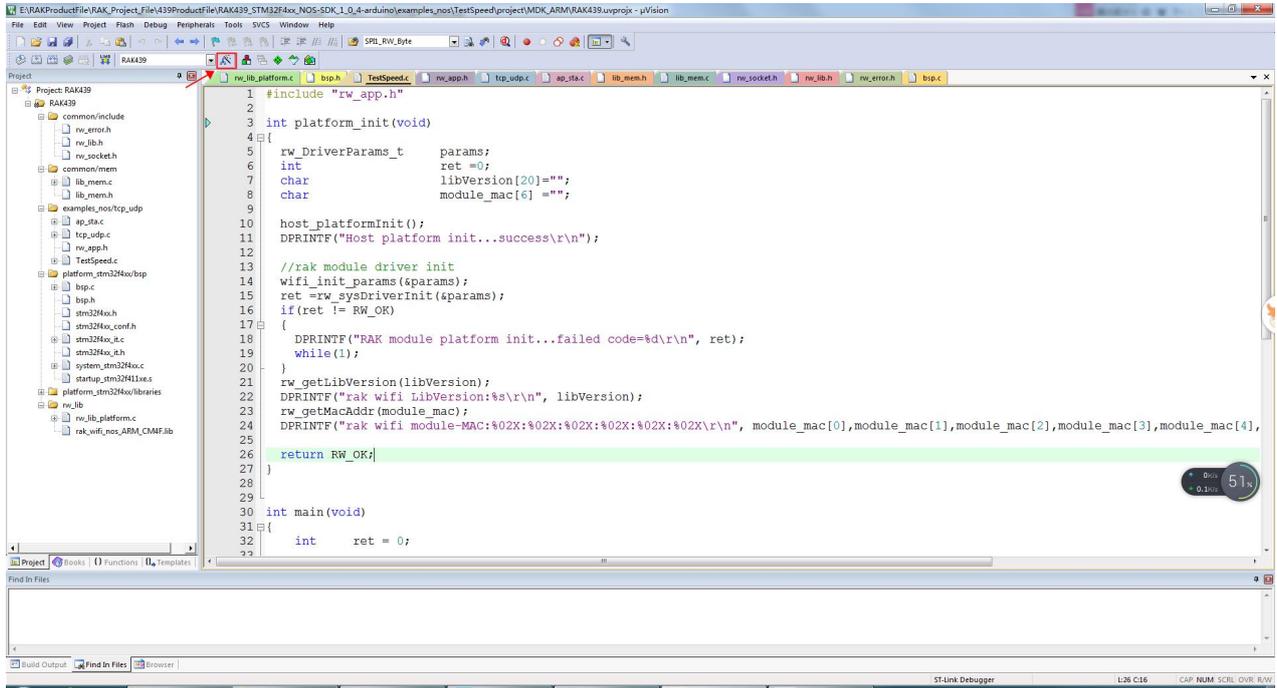
Driver Installation Please refer to STM32 Nucleo's documentation for STM32 Nucleo boards User manual.

3. After the installation of the driver, through the USB interface to connect the floor and the computer, and then insert the development board on the floor, as shown below:

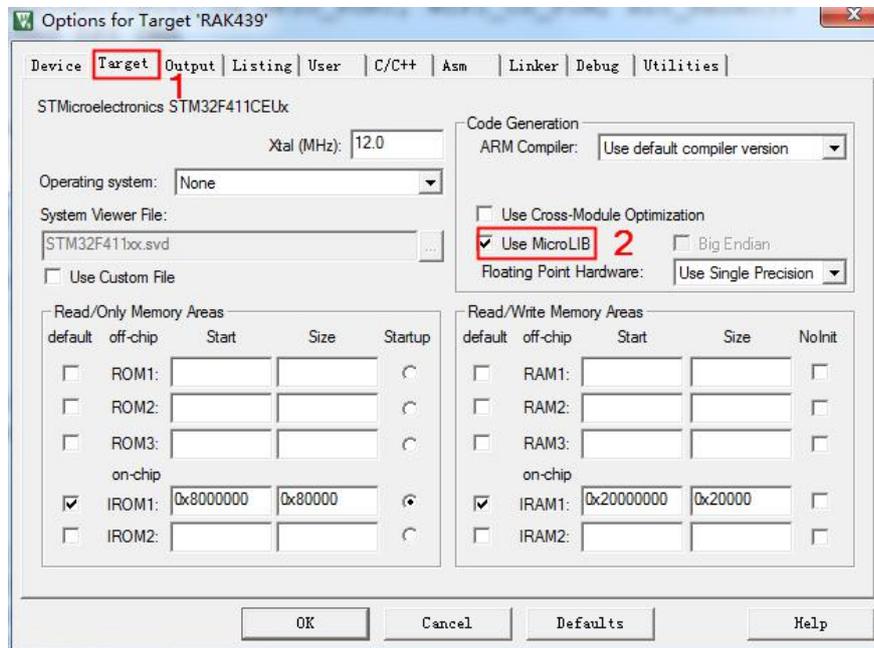


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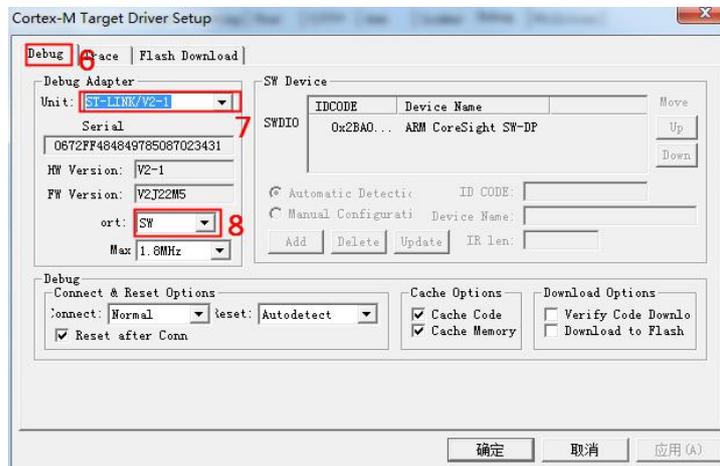
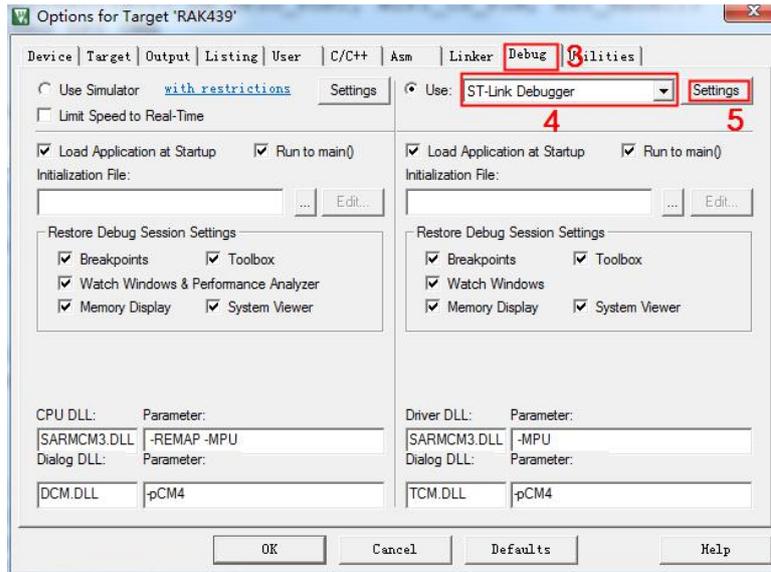
4.Unzip the program and use the keil MDK software to open the examples\_nos \ TestSpeed \ project \ MDK\_ARM \ RAK439.uvprojx project file under the RAK439\_STM32F4xx\_NOS-SDK\_1\_0\_4-arduino folder. And then click the red box shown below to configure the module Debug settings.



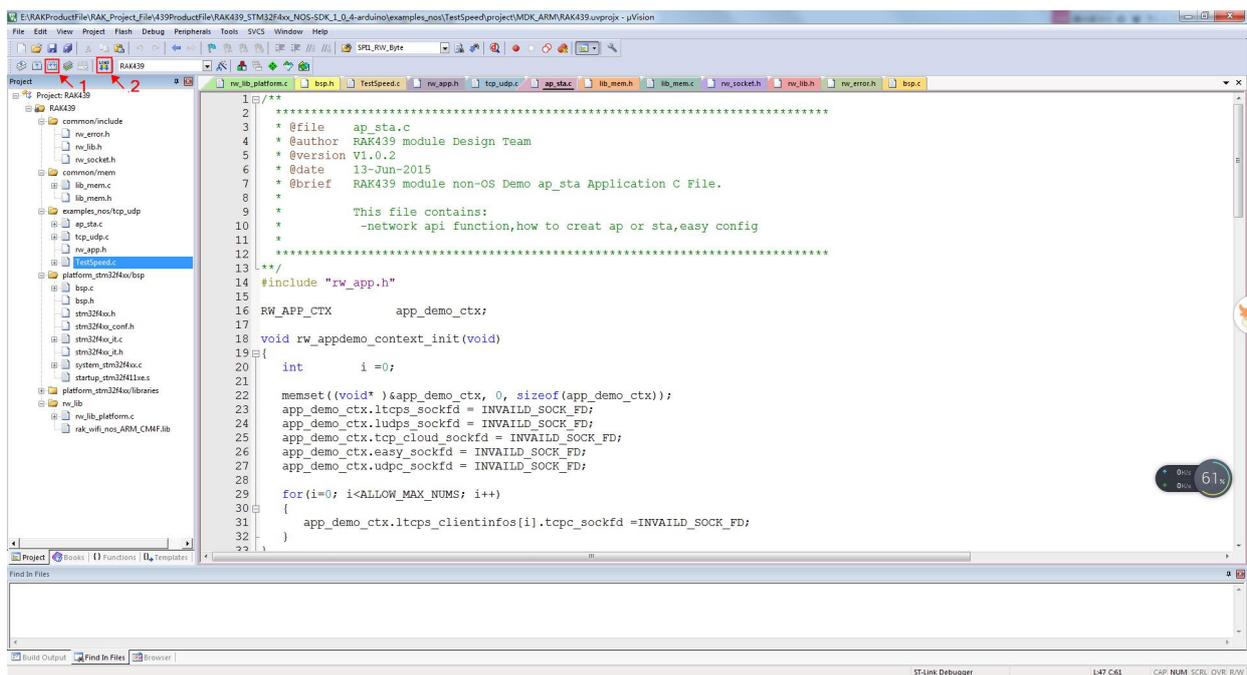
5.Click on the following settings, set the Debug configuration: (If there is no corresponding option, it may be ST-Link driver is not installed successfully, please re-install the ST-Link driver)



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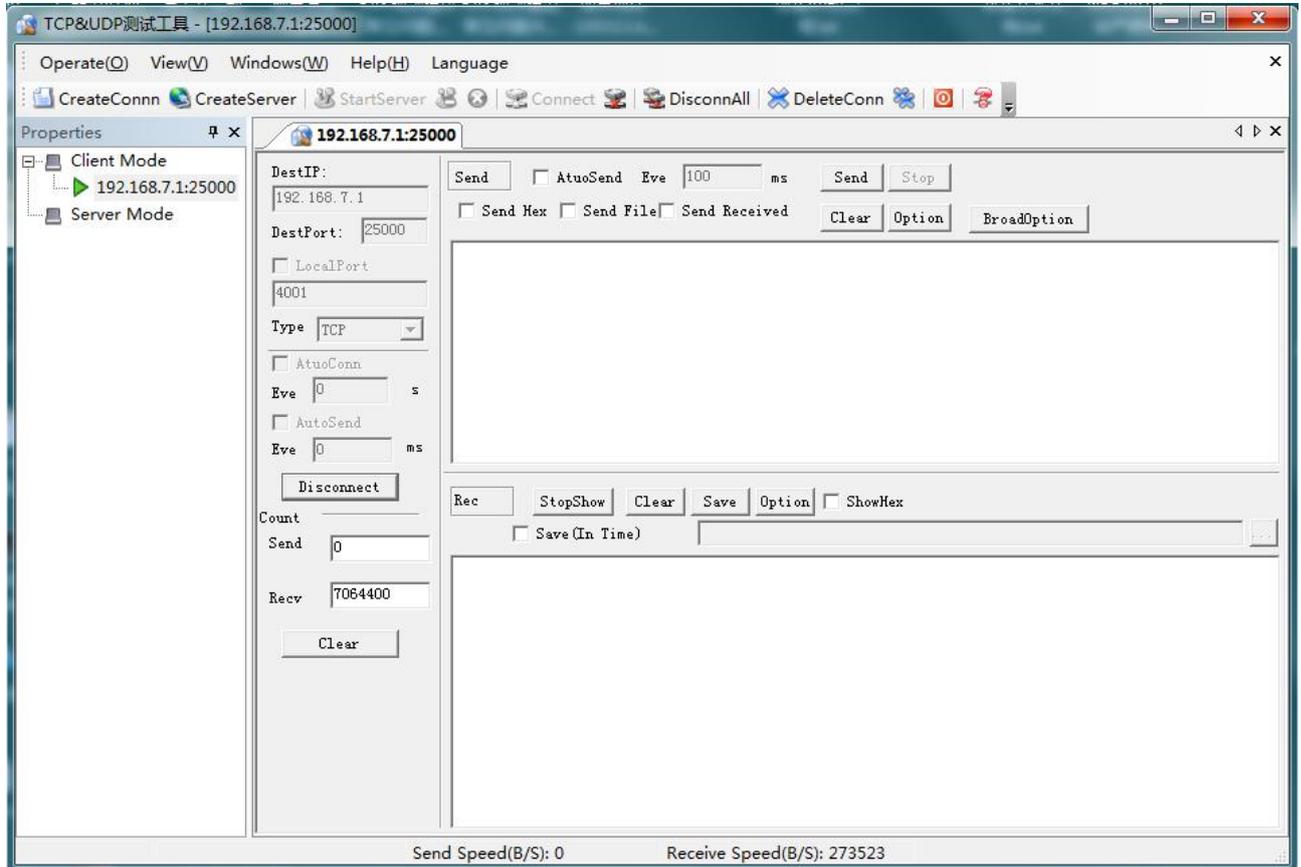


6. After setting, click on the compiler, after the success of the compiler can click to download the program. Keil MDK software compiler, download the program button as shown below:



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7. After the program is downloaded successfully, reset the STM32F411 backplane and WisNode-SPI development board, and then search for a SSID: RAK439\_AP WIFI signal, password: 1234567890. Use the computer connected to the WIFI, open the TCP / UDP test tool, select the establishment of TCP Client, IP address: 192.168.7.1, port: 25000.

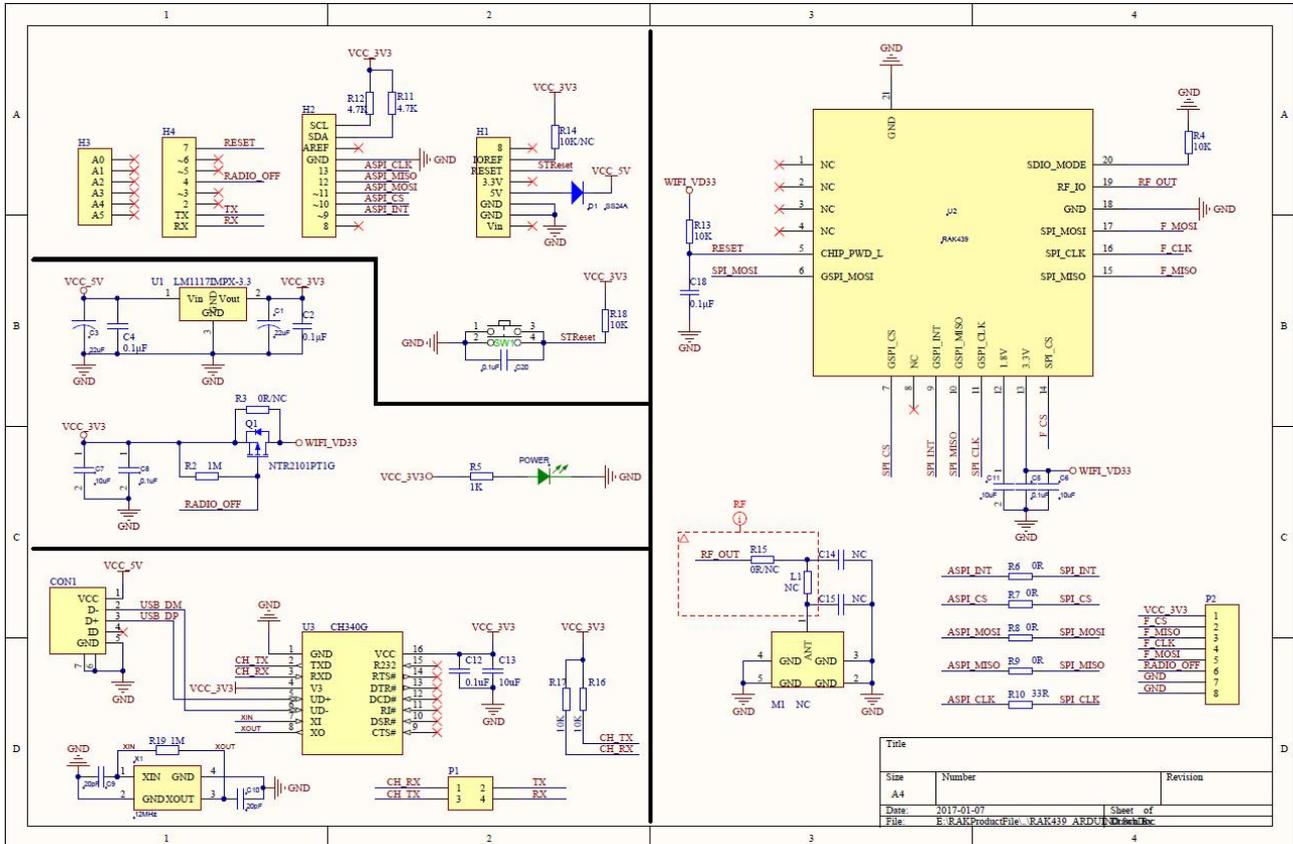


8. After the success of the establishment of the module will always send data to the tool, then open the test speed tool, you can view the maximum transfer rate RAK439. (The speed is variable, the maximum 8Mb / s)



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### 3. Appendix



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## 4. Modify Record

Version	Author	Data	Modify content
V1.0	caoxiaocheng	2016/12/28	Create Document
V1.1	xc.c	2017/02/21	Updata Document
V1.2	xc.c	2017/02/28	Modify some description and picture