SCINAN IOT505 module specification

VERSION: V 1.5

content

1 Product description

1.1 summarize

SNWM505 WiFi module integrated microcontroller (MCU) and 802.11 b / g / n 2.4GHz RF transceiver chip as a whole. Part of the RF circuit module has been calibrated by the factory test, customers can according to their needs to design the interface circuit and module communication, networking and protocols have been embedded inside the module, without having to do any setting outside the module, users in the use of portable devices by automatically connection with the AP (home WiFi hotspot); The first two features are soft AP, it can be connected and intelligent devices point to point. SNWM505 module can provide customers with a simple, low cost, reliable Wi-Fi network product design; easily embedded into the client some mature products go, just for a group of external 3.3V power supply.

1.2 Module basic parameters

Table 1 SN505 Technical specifications

Property	Functions to achieve
Power supply	3.3V+-0.33V
Clock	40MHZ
Temperature	Operating temperature：-10℃-70℃ Storage temperature：-55℃-125℃
Package	SMD/DIP 24 pins
Wireless feature	
General	■ COMS MAC, baseband physical layer, and a

Characteristics	single chip and radio frequency in IEEE 802.11b / g / n wireless
	■ 2.4GHZ complete 802.11n solution
	■ compatible with 802.11n standard
	■ Backward-compatible 802.11n mode·run 802.11b / g equipment
Interface	■ UART, SPI, I2C, PWM ,GPIO
Supports standard	■ compatible with IEEE 802.11b / g / n

Project	Description
Supported protocols and standards	IEEE 802.11n, IEEE 802.11g,EE 802.11b
Interface Type	UART,I2C,GPIO,PWM
Frequency Range	2.2-2.484GHZ
Working channel	1-11 (United States, Canada);1-13 (China, Europe) ;1-14 (Japan)
Operating mode	SoftAP, station
Sensitivity	54/135M:-74dBm 11M:-85dBm 6M: -88dBm

	1M: –90dBm
Power	135M:15dBm
	54M:15dBm
	11M:19dBm
Antenna connection	IPEX external connection
Working current	210mA(Maximum)
Size (L*W*H)	17.5MM*16.8MM*1.0MM

DC / power characteristics

DC Characteristics	Min	Typical values	Maximum
RX Active, HT40, MCS7	–	151 mA	–
RX Power saving, DTIM=1	–	15 mA	–
RX Listen	–	6 mA	–
TX HT40, MCS7 @15dBm	–	210 mA	–
TX CCK, 11Mbps @19dBm	–	242 mA	–
Standby mode Sleep mode	–	–	1.1 mA

1.3 The main application areas

◆ handheld devices
◆ personal medical
◆ Industrial Controls
◆ remote equipment monitoring
◆ networking applications
◆ industrial sensors and controllers
◆ portable wireless communications products

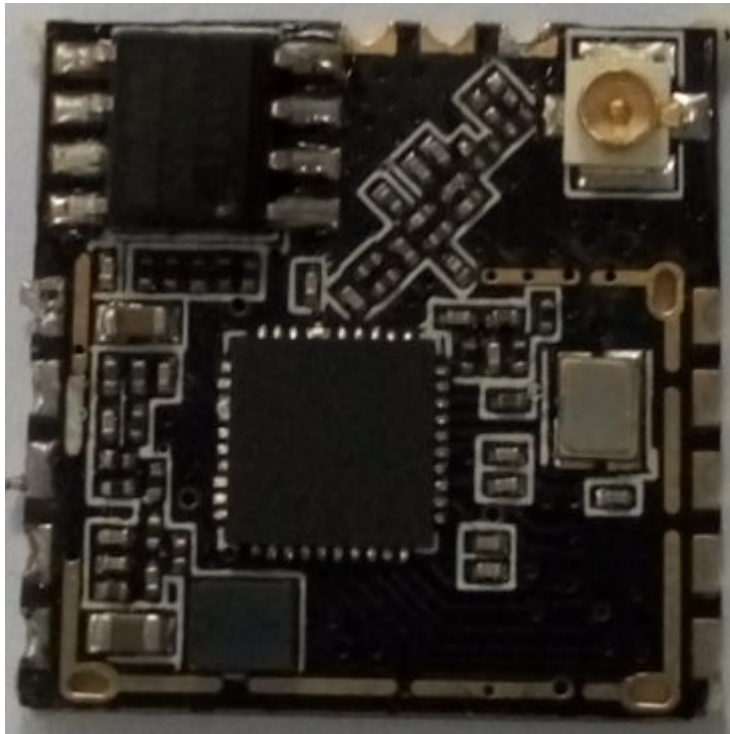Consumer Electronics

2 Hardware interface

2.1 Physical map
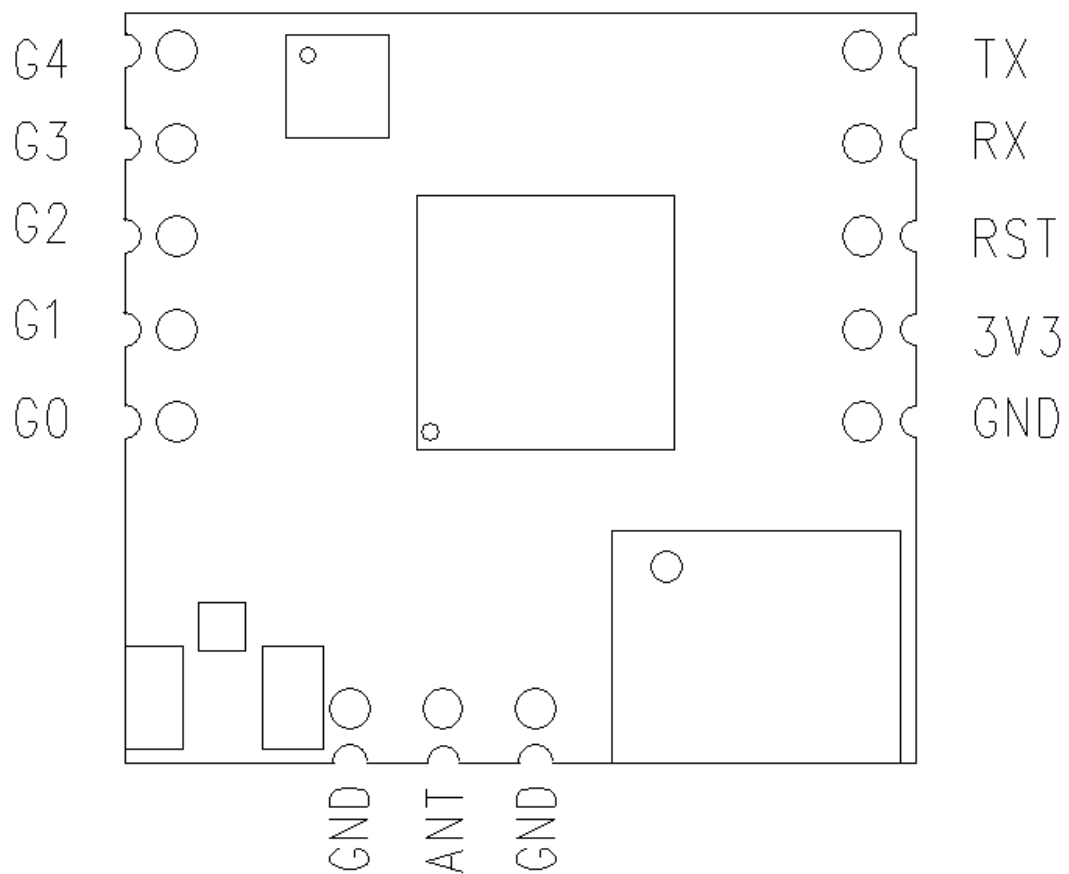

Figure 1 Positive physical map

2.2 Product Pin
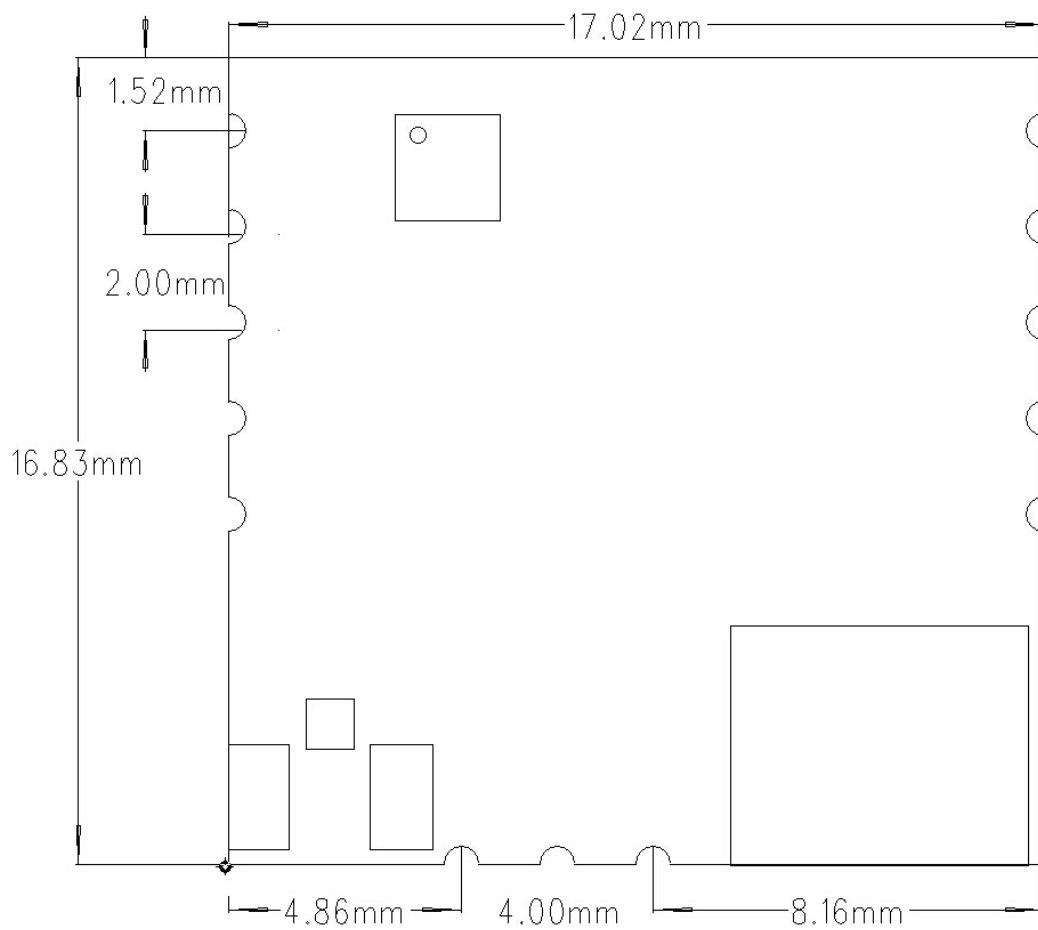
G4
G3
G2
G1
G0

TX
RX
RST
3V3
GND

GND
ANT
GND

Figure 2   The definition of 13pin

2.3 Dimension

After the addition of shield module has the following dimensions:
Length：17.02mm
Width：16.83mm
Thickness：3.10mm

2.4 Pin Definitions

Table 2 Pin Definitions

Pin Number	Type	Description	Processing instructions
1	P	GND	GND
2	INPUT	Digital I/O power supply	3V3
3	INPUT	External system reset active low	RESET
4	IN	UART RX	
5	OUT	UART TX	
6	IN/OUT	Programmable input/output	GPIO4
7	IN/OUT	AP KEY	GPIO3
8	IN/OUT	WIFI LED	GPIO2
9	IN/OUT	Programmable input/output	GPIO1
10	IN/OUT	Programmable input/output	GPIO0

11	P	GND	GND
12	ANT	ANT	ANT 可选
13	P	GND	GND

2.5 Instructions for use

When the module was powered on, the microcontroller starts, perform the following four steps:
1) RST pin high, MCU's TX feet first not as serial port, first low;
2) 200ms, RST low;
3) 50ms, RST high.
4) 100ms, serial port initialization, configuration of TX pin

2.7 External antenna

IOT505 offers two external antenna connector, as shown below: I-PEX connector interface and the pad lead connections (not welded I- PEX joints), by the user according to their needs choose between the two. If you use an external antenna, according to the IEEE802.11b / g / n standards, IOT505 demand and 2.4G antenna connection. Parameters external antenna requirements detailed in Table 3 below.
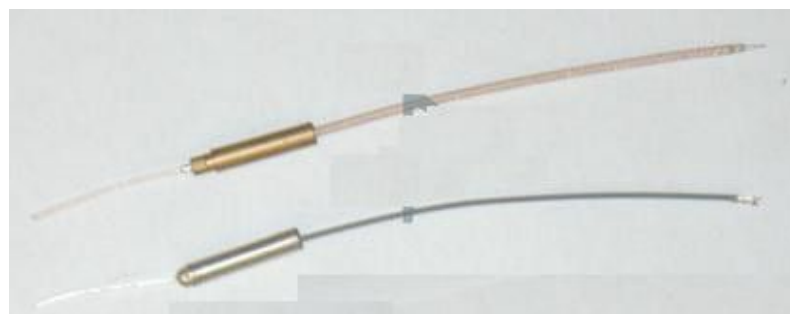

Figure 3 Antenna schematic

TABLE 3IOT505 External antenna parameters required

Project	Parameters
Frequency Range	2.4~2.5GHz
Impedance	50Ohm
VSWR	2(Max)
Return Loss	-10dB(Max)
Connection Type	I-PEXorpopulatedirectly

3 Typical applications
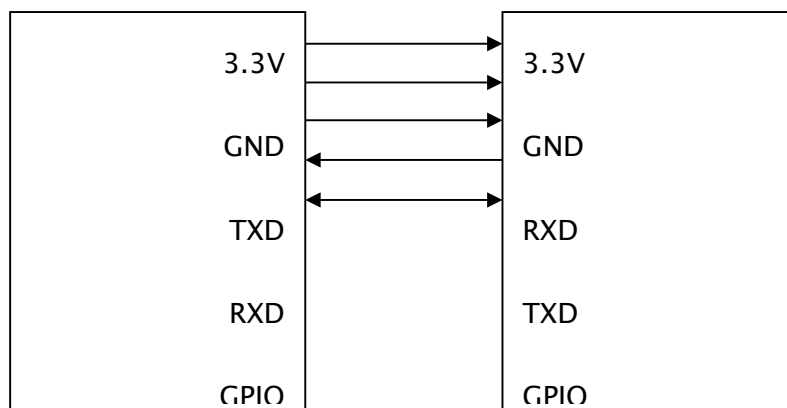
3.1 Typical hardware wiring diagram

Figure 3 Typical hardware connection diagram

3.2 Signal Description

RXD/TXD - Send and receive serial data signal
Serial port configurable parameters:
- ◆ baud rate
  （300, 600, 1200, 1800, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 23 0400, 380400, 460800, 921600）
- ◆ data bits（8）
- ◆ Stop bit（1,2）
- ◆ check digit（no check bits, even parity, odd parity）
- ◆ hardware flow control（No hardware flow control, Hardware flow control）

FCC 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.
Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.
Increase the separation between the equipment and receiver.
Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

FCC INFORMATION (additional)

OEM INTEGRATION INSTRUCTIONS:
This device is intended only for OEM integrators under the following conditions: The module must be installed in the host equipment such that 20 cm is maintained between the antenna and users, and the transmitter module may not be co-located with any other transmitter or antenna. The module shall be only used with the external antenna(s) that has been originally tested and certified with this module. As long as 3 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

Validity of using the module certification:
In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization for this module in combination with the host equipment is no longer considered valid and the FCC ID of the module cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End product labeling:
This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains FCC ID: 2AFO5-SNIOT505".

Information that must be placed in the end user manual: The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

This device must be kept away from all persons by 20cm or more and installations using less distance, or installations using antennas with gain greater than that with which this was Certified will require additional approvals.

Antenna Specification:
Type: Integrated
Model: SNIOT505
Brand: N.A.
Gain: 3dBi