



# PRODUCT SPECIFICATION

Version 1.0

## WIFI Module

**Model Number: W2YM2510**  
(MT7603UN)

客户认可 Custom Approval Section		
Custom Name		
Department		
Approval		Date:

拟制 DESIGN	审核 CHECK	批准 APPROVAL
李茂松	马毅	陈宇科
2018/10/23	2018/10/23	2018/10/23

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# PRODUCTS SPECIFICATION

W2YM2510

## Document revision history

Revision	Date	Approved by	Remarks
Version 1.0	2018-10-23		Draft

## **1. General Description**

W2YM2510 is to specify the product requirements for 802.11b/g/n USB Module. This Card is based on MTK MT7603UN chipset that complied with IEEE 802.11n, and it is also backward complied with IEEE 802.11b/g standard from 2.4~2.5GHz. It can be used to provide up to 54Mbps for IEEE 802.11g, 11Mbps for IEEE 802.11b and 300Mbps for IEEE 802.11n to connect your wireless LAN.

With seamless roaming, fully interoperability and advanced security with WEP standard, 802.11b/g/n USB Module offers absolute interoperability with different vendors 802.11b/g/n Access Points through the wireless LAN.

## **2. Features**

- Compatible with IEEE 802.11b standard to provide wireless 11Mbps data rate.
- Compatible with IEEE 802.11g standard to provide wireless 54Mbps data rate.
- Compatible with IEEE 802.11n standard to provide wireless 300Mbps data rate.
- Operation at 2.4~2.5GHz frequency band to meet worldwide regulations
- Supports WEP, 802.1x, WPA and WPA2 enhanced security
- Friendly user configuration and diagnostic utilities
- Drivers support Windows 2000, Windows 7 and XP, Linux, Android
- High speed USB 2.0 interface
- ROHS compliant

### 3. Application Diagrams

#### 3.1 General Requirements

##### 3.1.1 IEEE 802.11b Section

	Feature	Detailed Description
3.2.1.1	Standard	<ul style="list-style-type: none"><li>• IEEE 802.11b</li></ul>
3.2.1.2	Radio and Modulation Schemes	<ul style="list-style-type: none"><li>• DQPSK , DBPSK and CCK with DSSS</li></ul>
3.2.1.3	Operating Frequency	<ul style="list-style-type: none"><li>• 2400 ~ 2483.5MHz ISM band</li></ul>
3.2.1.4	Channel Numbers	<ul style="list-style-type: none"><li>• 13 channels for Worldwide</li></ul>
3.2.1.5	Data Rate	<ul style="list-style-type: none"><li>• at most 11Mbps</li></ul>
3.2.1.6	Media Access Protocol	<ul style="list-style-type: none"><li>• CSMA/CA with ACK</li></ul>
3.2.1.7	Transmitter Output Power at Antenna Connector	<ul style="list-style-type: none"><li>• Typical RF Output Power at each RF chain, and at room Temp 25°C</li><li>• 17±2 dBm at 11Mbps</li></ul>
3.2.1.8	Receiver Sensitivity at Antenna Connector	<ul style="list-style-type: none"><li>• Typical Sensitivity at each RF chain. @Frame (1000-byte PDUs) Error Rate&lt;8% at room Temp 25°C</li><li>• -83 dBm for 11Mbps</li></ul>

## 3.1.2 IEEE 802.11g Section

	Feature	Detailed Description
3.2.2.1	Standard	<ul style="list-style-type: none"> <li>IEEE 802.11g</li> </ul>
3.2.2.2	Radio and Modulation Type	<ul style="list-style-type: none"> <li>QPSK , BPSK , 16QAM ,64QAM with OFDM</li> </ul>
3.2.2.3	Operating Frequency	<ul style="list-style-type: none"> <li>2400 ~ 2483.5MHz ISM band</li> </ul>
3.2.2.4	Channel Numbers	<ul style="list-style-type: none"> <li>13 channels for Worldwide</li> </ul>
3.2.2.5	Data Rate	<ul style="list-style-type: none"> <li>at most 54Mbps</li> </ul>
3.2.2.6	Media Access Protocol	<ul style="list-style-type: none"> <li>CSMA/CA with ACK</li> </ul>
3.2.2.7	Transmitter Output Power at Antenna Connector	<ul style="list-style-type: none"> <li>Typical RF Output Power at each RF chain, at room Temp. 25°C</li> <li>13±2 dBm at 54Mbps</li> </ul>
3.2.2.8	Receiver Sensitivity at Antenna Connector	<ul style="list-style-type: none"> <li>Typical Sensitivity at each RF chain. @Frame (1000-byte PDUs) Error Rate&lt;10% at room Temp 25°C</li> <li>-71 dBm at 54Mbps</li> </ul>

## 3.1.3 IEEE 802.11n Section

	Feature	Detailed Description	
3.2.3.1	Standard	<ul style="list-style-type: none"> <li>IEEE 802.11n</li> </ul>	
3.2.3.2	Radio and Modulation Type	<ul style="list-style-type: none"> <li>BPSK , QPSK , 16QAM ,64QAM with OFDM</li> </ul>	
3.2.3.3	Operating Frequency	<ul style="list-style-type: none"> <li>2400 ~ 2483.5MHz for ISM band</li> </ul>	
3.2.3.4	Data Rate	<ul style="list-style-type: none"> <li>at most 300 Mbps</li> </ul>	
3.2.3.5	Media Access Protocol	<ul style="list-style-type: none"> <li>CSMA/CA with ACK</li> </ul>	
3.2.3.6	Transmitter Output Power at Antenna Connector	<ul style="list-style-type: none"> <li>Typical RF Output Power at each RF chain, and at room Temp. 25°C</li> </ul>	
		<ul style="list-style-type: none"> <li>2.4GHz Band/HT20</li> <li>15±2dBm at MCS7</li> </ul>	<ul style="list-style-type: none"> <li>2.4GHz Band/HT40</li> <li>13±2dBm at MCS7</li> </ul>
3.2.3.7	Receiver Sensitivity at Antenna Connector	Typical Sensitivity at each RF chain. @Frame(1000-byte PDUs)Error Rate=10% and at room Temp. 25°C	
		<ul style="list-style-type: none"> <li>2.4GHz Band/HT20</li> <li>-68dBm at MCS7</li> </ul>	<ul style="list-style-type: none"> <li>2.4GHz Band/HT40</li> <li>-66dBm at MCS7</li> </ul>

## 4. Electrical and Thermal Characteristics

### 4.1 Temperature Limit Ratings

Parameter	Minimum	Maximum	Units
Storage Temperature	-40	+80	°C
Ambient Operating Temperature	0	60	°C
Junction Temperature	0	125	°C

### 4.2 General Section

	Feature	Detailed Description
4.2.1	Antenna Type	<ul style="list-style-type: none"> <li>PIFA antenna</li> </ul>
4.2.2	Operating Voltage	<ul style="list-style-type: none"> <li>5V±10%</li> </ul>
4.2.3	Current Consumption	<ul style="list-style-type: none"> <li>450 mA at continuous transmit mode</li> </ul>
4.2.4	USB	<ul style="list-style-type: none"> <li>High Speed USB2.0 Interface</li> </ul>

### 4.3 Software

Driver	Windows , Linux , Android
Security	64/128-bits WEP, WPA, WPA2

### 4.4. EEPROM Information

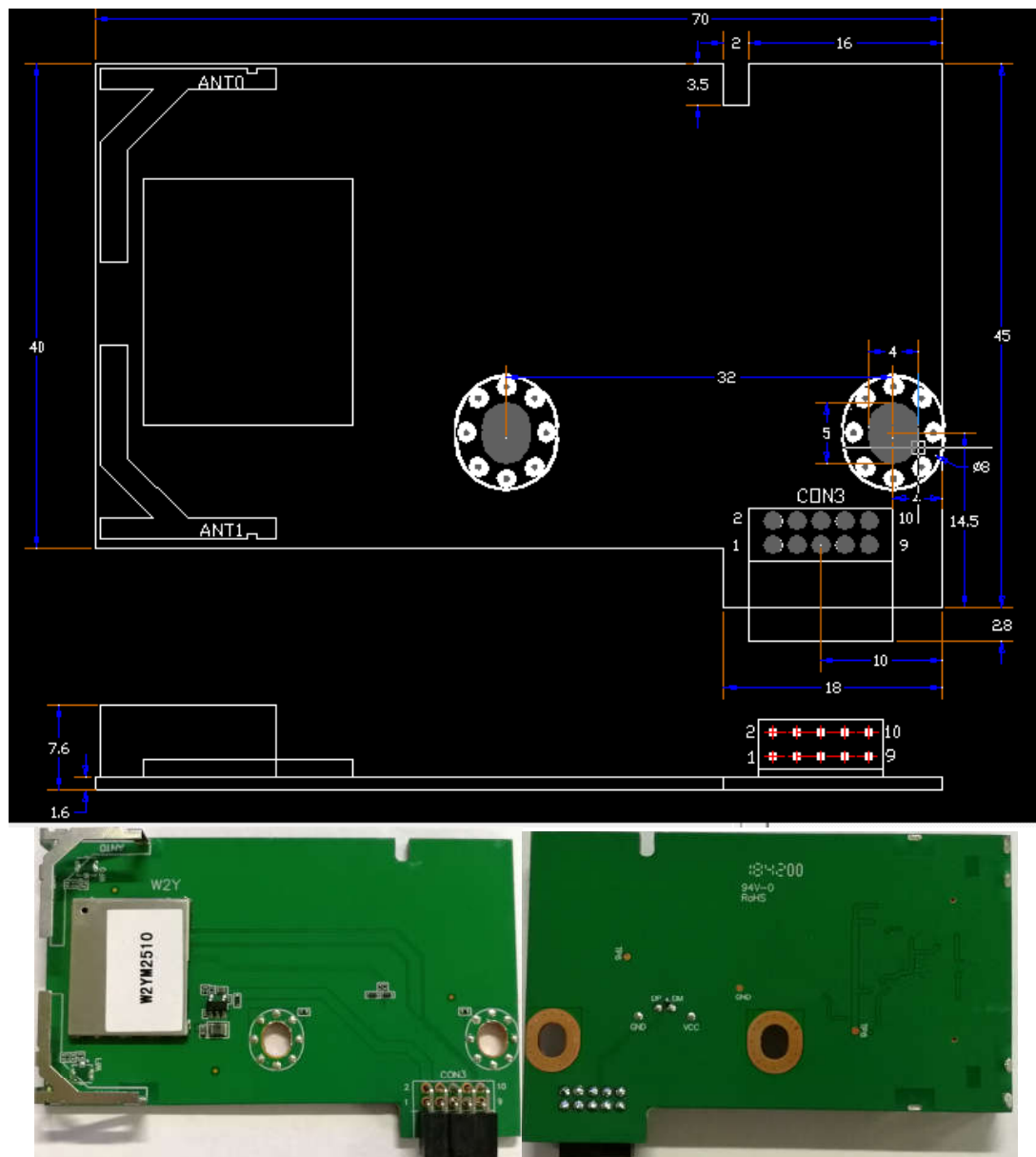
Reg Domain	Worldwide 2.4G Read from registry; Control by driver
	Offset 0x39 for 2.4G:0xFF
Vendor ID	0x0E8D
Product ID	0x7603

## 5. Mechanical Characteristics

### 5.1 Mechanical Requirements

	Feature	Detailed Description
4.4.1	Length	<ul style="list-style-type: none"> <li>70mm</li> </ul>
4.4.2	Width	<ul style="list-style-type: none"> <li>45mm</li> </ul>
4.4.3	Height	<ul style="list-style-type: none"> <li>1.6mm(PCB)</li> </ul>

### 5.2 Mechanical Dimensions



Size error range:

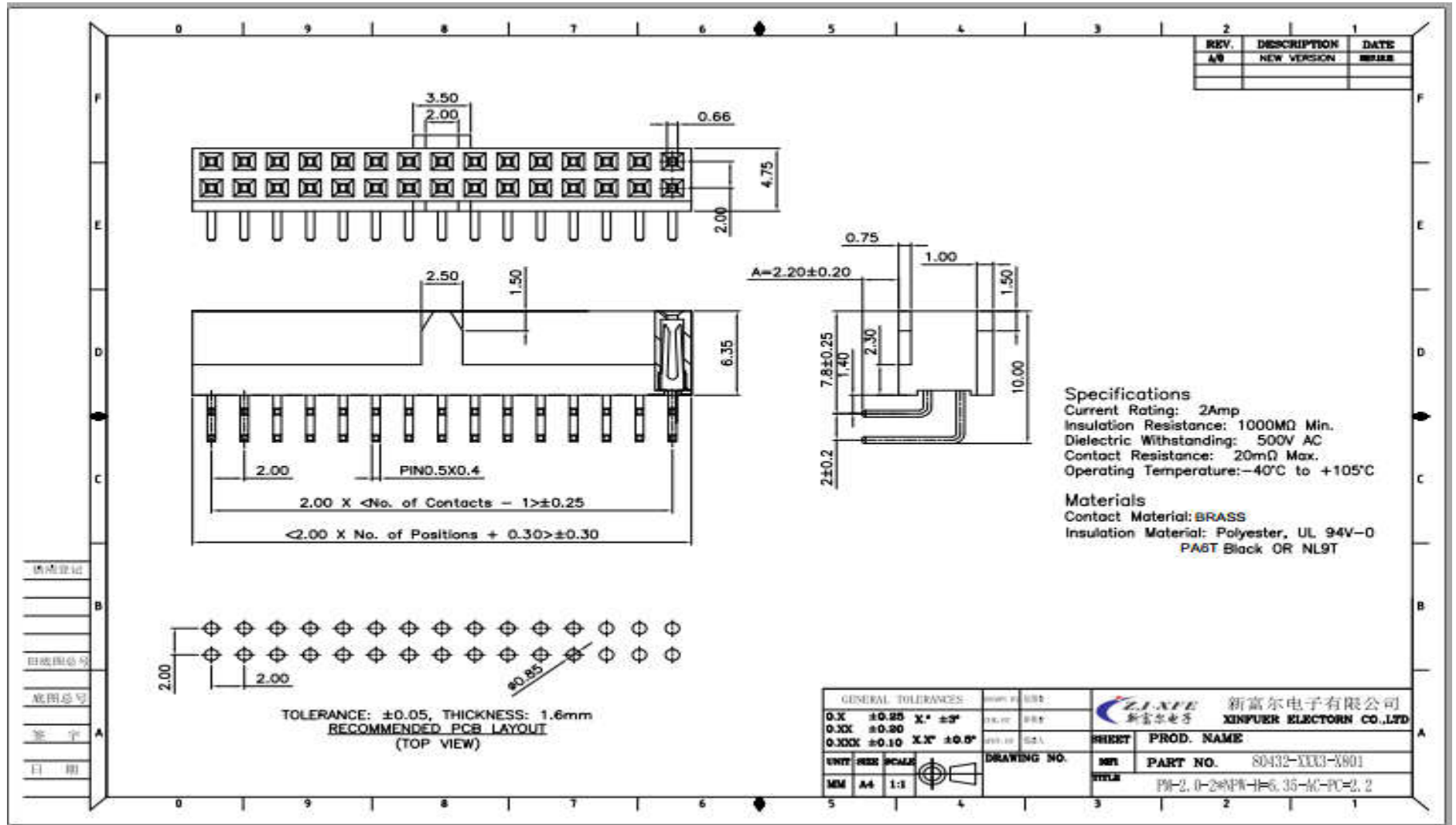
DIM (MM)	Tolerance (MM)
0-5	$\pm 0.15$
5-10	$\pm 0.20$
10-50	$\pm 0.30$

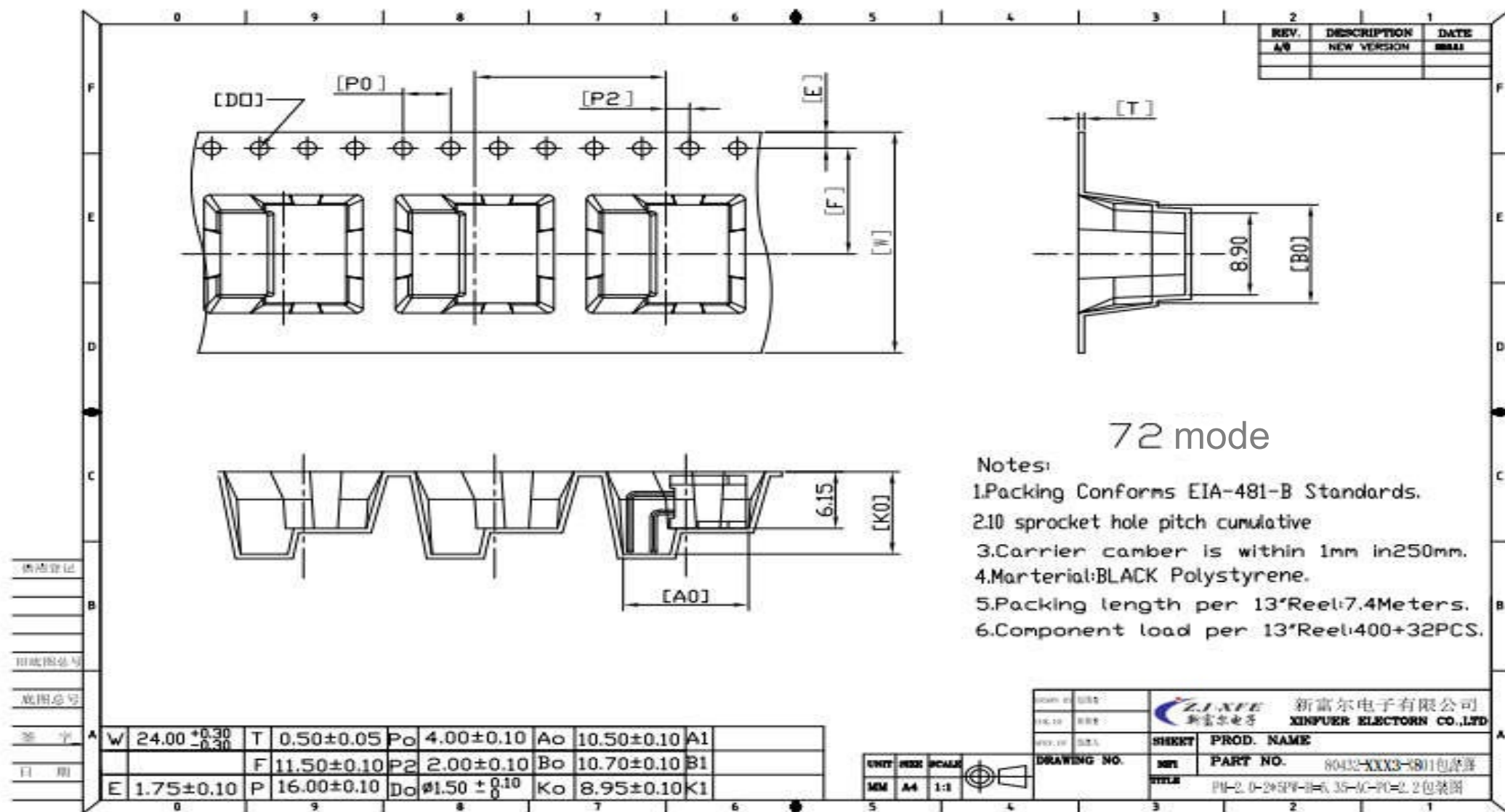
### 5.3 Pin Description

Pin	1	2	3	4	5	6	7	8	9	10
Definit ion	VCC (5V)	VCC (5V)	GND	D-	NC	D+	WL_Host_Wake (Internal pull-up 10K Ohm)	GND	NC	Reset (Internal pull-up 10K Ohm)



## Appendix : Connector





### **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.

Caution: The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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

If power exceeds the limit and the distance (Over 20cm distance in actual use between the device and user) is compliant with the requirement

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

### **FCC Radiation Exposure Statement**

The modular can be installed or integrated in mobile or fix devices only. This modular be installed in TV device.

This modular complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be collocated or operating in conjunction with antenna or transmitter. If the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display label referring to the enclosed module. This exterior label can use wording such as the following:

“Contains Transmitter Module FCC ID: 2AC23-W2Y Or Contains FCC ID: 2AC23-W2Y when the module is installed inside another device, the user manual of this device must contain below warning statements;

1. 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.

(2) This device must accept any interference received, including interference that may undesired operation.

2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. The devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product. This device is intended only for OEM integrators under the following conditions:

1) The antenna must be installed such that 20 cm is maintained between the antenna and user.

2) The transmitter module may not be co-located with any other transmitter or antenna. Module Antenna Type: Integral Antenna, ANT Gain: 2dBi

**IC Statement**

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

(1) This device may not cause interference; and

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

The term "IC: " before the certification/registration number only signifies that the Industry Canada technical specifications were met. This product meets the applicable Industry Canada technical specifications.

Le présent appareil est conforme aux CNR d'Industrie Canada applicable aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement

**CE Statement**

Herby, Hui Zhou Gaoshengda Technology Co., LTD declares that this WIFI Module, W2YM2510 is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. In accordance with Article 10(2) and Article 10(10), this product allowed to be used in all EU member states.

Use the WIFI Module in the environment with the temperature between 0℃ and 60℃

Operation Frequency: 2412MHz~2472MHz (802.11b/802.11g/802.11n(HT20))

2422MHz~2462MHz (802.11n(HT40))

Max output power: WIFI: 0.0697W

Manufacturer: Hui Zhou Gaoshengda Technology Co., LTD

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E-mail: [guanh@gaosd.cn](mailto:guanh@gaosd.cn)

# DECLARATION OF CONFORMITY

I hereby declare that the product

**Product:**

Product Name: WIFI Module

Model: W2YM2510

Brand Name: N/A

Hardware Version: V1.0

Software Version: package\_Ulv1.84\_DLLv3.97\_driverV0.49

(Name of product, type or model, batch or serial number)

satisfies all the technical regulations applicable to the product within the scope of Council Directives 2014/53/EU, 2014/35/EU and 2014/30/EU:and declare that the same application has not been lodged with any other notified body.

EN 60950-1: 2006+A11: 2009+A1: 2010+A12: 2011+A2: 2013

Draft ETSI EN 300 328 V2.2.0 (2017-11)

Draft ETSI EN 301 489-17 V3.2.0 (2017-03)

Draft ETSI EN 301 489-1 V2.2.0 (2017-03)

EN 62311:2008

(Title(s) of regulations, standards, etc.)

All essential radio test suites have been carried out.

NOTIFIED BODY: MiCOM Labs Inc

– Address:

575 Boulder Court,

Pleasanton, California94566

USA

Identification Number: 2280

**MANUFACTURER or AUTHORISED REPRESENTATIVE:**

– Address:

Hui Zhou Gaoshengda Technology Co., LTD

NO.75 Zhongkai Development Area, Huizhou, Guangdong, China

This declaration is issued under the sole responsibility of the manufacturer and, if applicable, his authorised representative.

**Point of contact:**

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(Name, telephone and fax number)

2019-01-22

(Place, date of issue)

*Hui Guan*

(Signature)

Hui Guan, N/A

(Name and title in block letters)