

# HK NATER TECH LIMITED

## RL-UM12BS-8188ETV模块承认书

客户名称

Customer: \_\_\_\_\_

样品名称

Description: RL-UM12BS-8188ETV 模块

客户料号

Customer P/N: \_\_\_\_\_

日期

Date: \_\_\_\_\_

| 客户栏 Customer |            |         |
|--------------|------------|---------|
| 核准Approve    | 审核Auditing | 承认Admit |
|              |            |         |

| 供应商栏 Provider |            |         |
|---------------|------------|---------|
| 核准Approve     | 审核Auditing | 承认Admit |
|               |            |         |

客户名称:

公司地址:

电话:

传真:

联系人:

E-mail:

供方名称: HK NATER TECH LIMITED

公司地址: 深圳市宝安区宝民二路贤基大厦2楼

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尊敬的客户: 请收到我公司样品承认书三日内传首页, 谢谢!

# **RL-UM12BS-8188ETV**

## **Product Specifications**

**WLAN 11b/g/n USB module (1T1R)**

**Version: V1.0**

# Overview

UM12BS is a WLAN 11n USB module, which fully supports the features and

Functional compliance of IEEE 802.11n,e and i standards. It supports up to

150Mbps high-speed wireless network connections.

It is designed to provide excellent performance with low power Consumption and enhance the advantages of robust system and cost-effective.

It is targeted at competitive superior performance, better power Management applications.

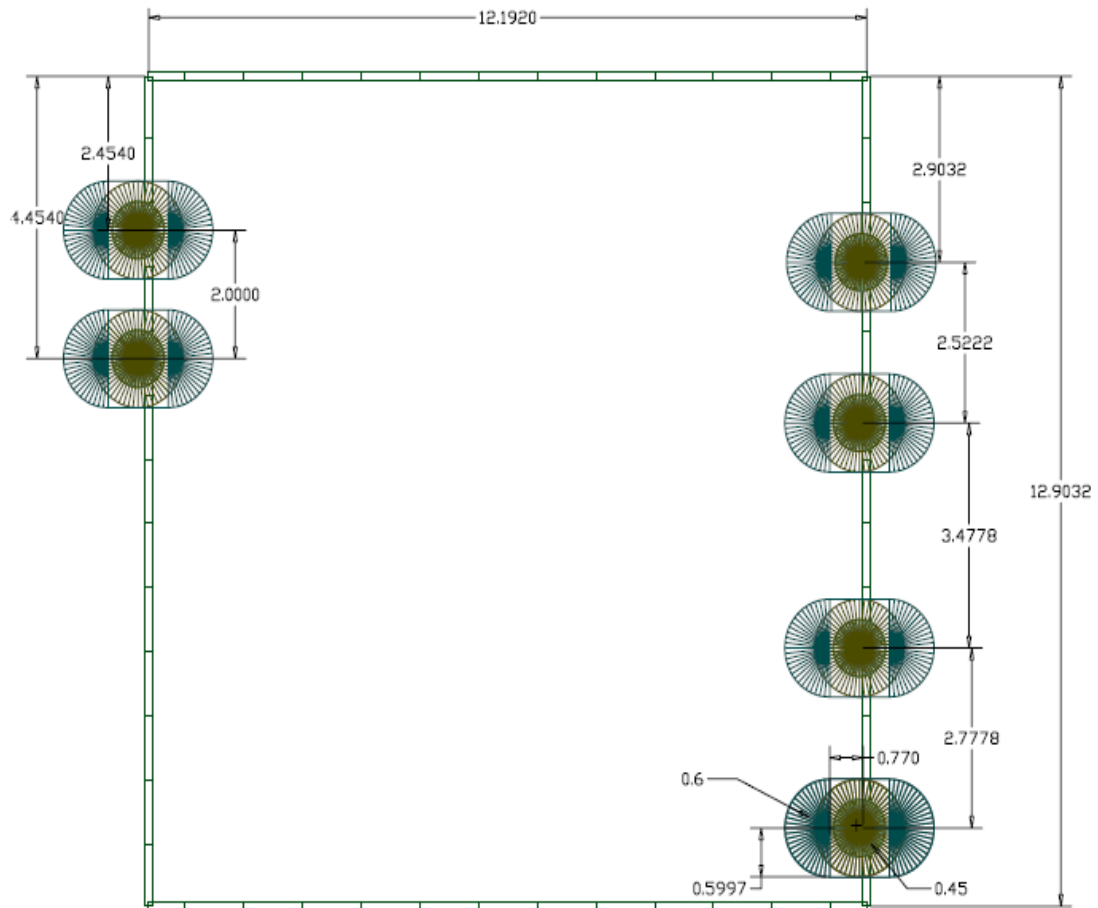
# Features

- \* Operates in 2.4 GHz frequency bands
- \* 1x1 MIMO technology improves effective throughput and range existing 802.11 b/g products
- \* Data rates: up to 150Mbps
- \* 802.11e-compatible bursting and I standards
- \* BPSK, QPSK, 16 QAM, 64 QAM modulation schemes
- \* WEP, TKIP, and AES, WPA, WPA2 hardware encryption schemes

# General Specification

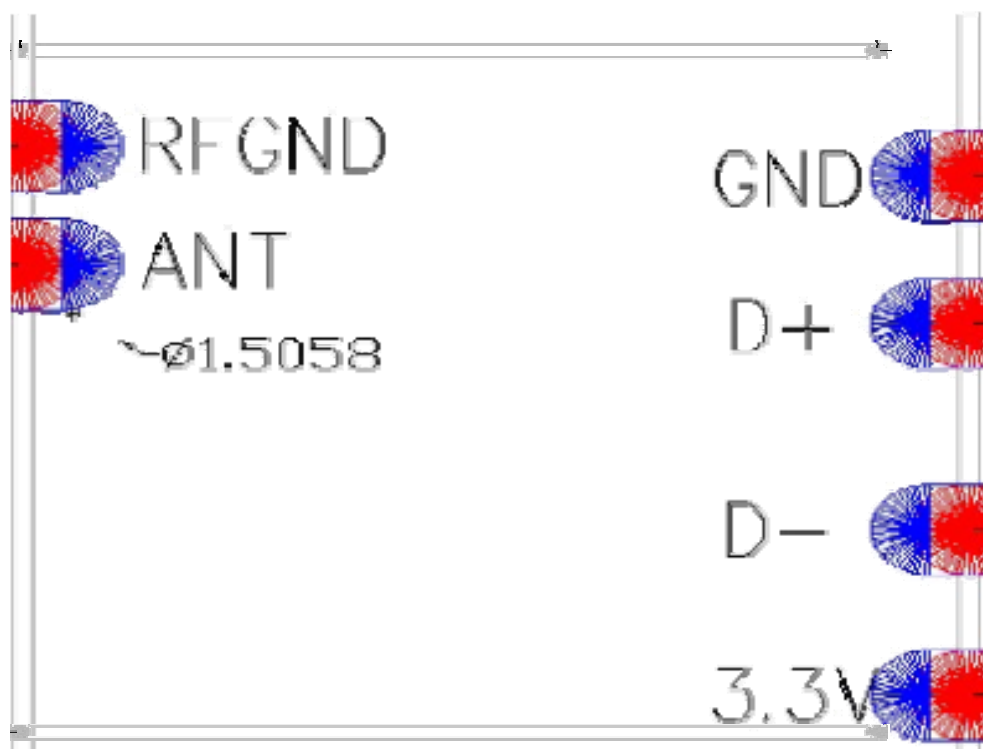
|                          |  |
|--------------------------|--|
| Model                    | RL-UM12BS-8188ETV  |
| Product Name             | WLAN 11n USB module  |
| Major Chipset            | Realtek RTL8188ETV   |
| Standard                 | 802.11b/g/n, 802.3, 802.3u   |
| Data Transfer Rate       | 1,2,5.5,6,11,12,18,22,24,30,36,48,54,60,90,120 and maximum of 150Mbps  |
| Modulation Method        | BPSK/ QPSK/ 16-QAM/ 64-QAM   |
| Frequency Band           | 2.4~2.4835 GHz ISM Band  |
| Spread Spectrum          | IEEE 802.11b: DSSS (Direct Sequence Spread Spectrum)<br>IEEE 802.11g/n:OFDM (Orthogonal Frequency Division Multiplexing) |
| RF Output Power          | < 13dBm@11n,< 18dBm@11b,< 14dBm@11g  |
| Operation Mode           | Ad hoc, Infrastructure   |
| Receiver Sensitivity     | 11Mbps -86dBm@8%,54Mbps -73dBm@10%,130Mbps -66dBm@10%  |
| Operation Range          | Up to 180 meters in open space   |
| <b>Operating Channel</b> | 11: (Ch. 1-11) – United States<br>13: (Ch. 1-13) – Europe 14: (Ch. 1-14) – Japan   |
| LED                      |  |
| OS Support               | Windows 2000,XP32-64,Vista 32/64,Win7 32/64,Linux,Mac, Android, WIN CE   |
| Security                 | WEP, TKIP, AES, WPA, WPA2  |
| Interface                | USB 2.0  |
| Power Consumption        | DC3.3V<br>Maximum power dissipation in 150MA   |
| Operating Temperature    | -20~+60°C ambient temperature  |
| Storage Temperature      | -10 ~ 70°C ambient temperature   |
| Humidity                 | 5 to 90 % maximum (non-condensing)   |
| Dimension                | 12. 9032 x 12.1920 x 1.6mm (LxWxH) +-0.2MM   |

# Dimensions:



The PCB tolerances within + / -0.2 or so

# PIN Definition

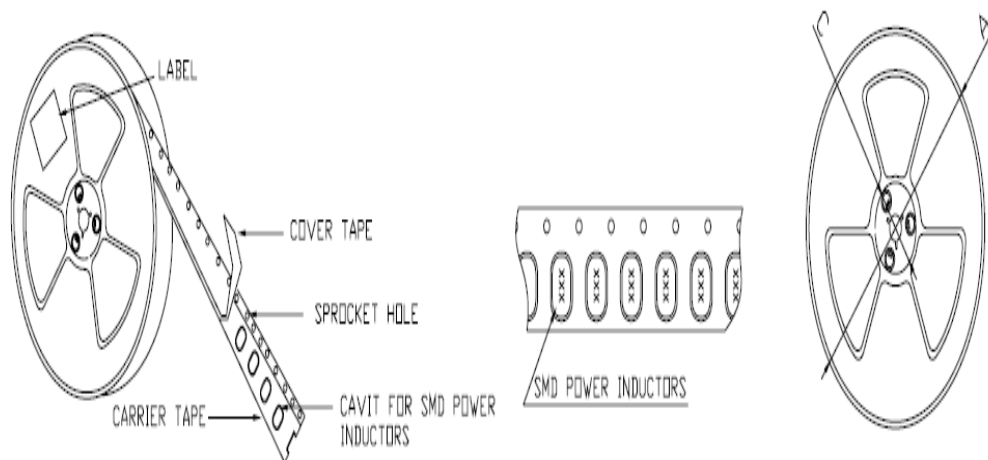


# Physical map



注：我司UM12BS有红、黑、蓝、黄四种颜色的板，上图标出一种蓝色供客户参考。

# Packaging



# External antenna reference design

此部分需要做50R的单线阻抗

layout走线请走弧型线或直线

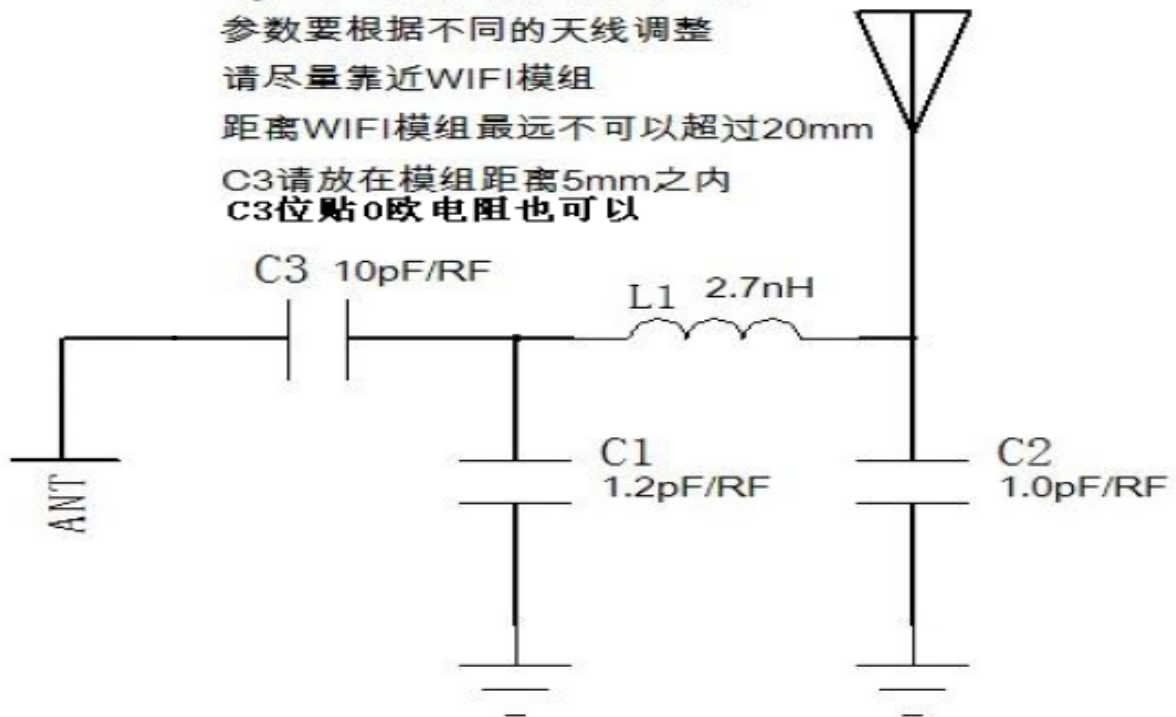
参数要根据不同的天线调整

请尽量靠近WIFI模组

距离WIFI模组最远不可以超过20mm

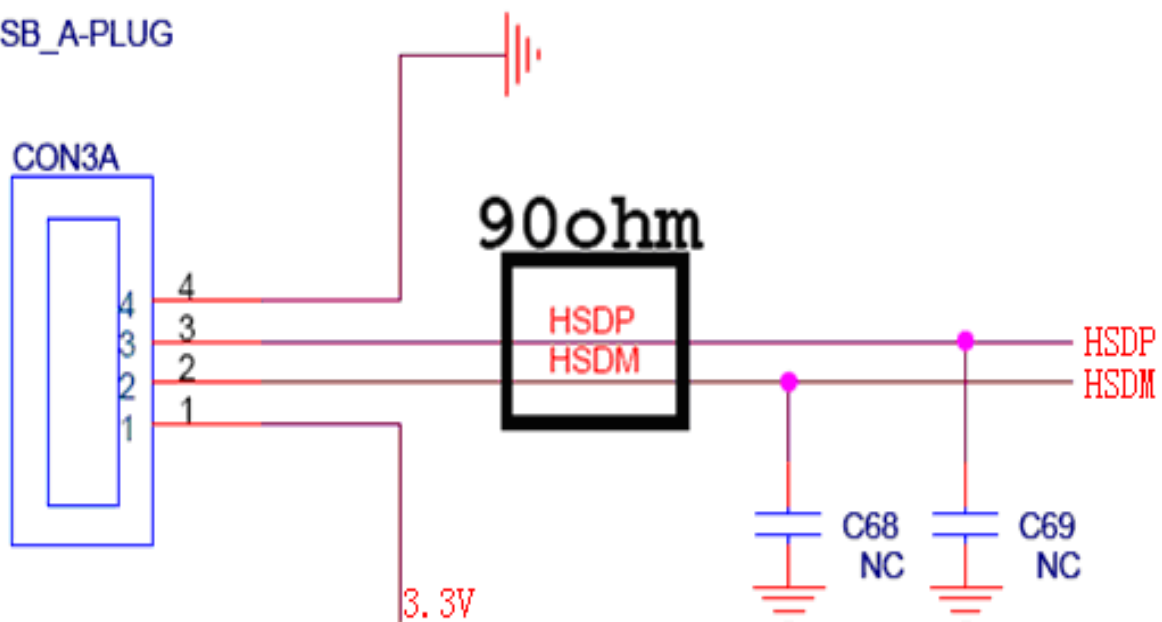
C3请放在模组距离5mm之内

C3位贴0欧电阻也可以



## USB interface electrical characteristics

USB\_A-PLUG



Two root go line do difference, but also required to make 90 Ohm the impedance test

## DC Characteristics

| Symbol       | Parameter               | Minimum | Typical | Maximum | Units |
|--------------|-------------------------|---------|---------|---------|-------|
| VD33A, VD33D | 3.3V I/O Supply Voltage | 3.1     | 3.3     | 3.5     | V     |
| VD15A, VD15D | 1.5V Supply Voltage     | 1.4     | 1.5     | 1.6     | V     |
| IDD33        | 3.3V Rating Current     | -       | -       | 500     | mA    |

## Power Consumption

| Parameters                                  | Sym       | Conditions | Min | Typ | Max | Unit |
|---|-----------|------------|-----|-----|-----|------|
| 3.3V Supply Voltage                         | Vc33      |            | 3.1 | 3.3 | 3.5 | V    |
| 1.5V Supply Voltage                         | Vc15      |            | 1.4 | 1.5 | 1.6 | V    |
| <b>Receiving Tests the biggest receive</b>  |           |            |     |     |     |      |
| 3.3V Current Consumption                    | Icc33rx   | H40MCS7    |     | 90  |     | MA   |
| 3.3V Current Consumption                    | Icc33rx   | OFDM 54M   |     | 100 |     | MA   |
| <b>TransmissionBiggesttransmission test</b> |           |            |     |     |     |      |
| 3.3V Current Consumption                    | Icc33tx   | H40 MCS7   |     | 140 |     | MA   |
| 3.3V Current Consumption                    | Icc33tx   | OFDM 54M   |     | 170 |     | MA   |
| <b>The depth waits for an opportunity</b>   | Ic33tx/rx |            |     | 2   |     | MA   |
| <b>Deep sleep</b>                           | Ic33tx/rx |            |     | 2   |     | MA   |



# 贴片WIFI模块装机的前注意事项

- 1、客户在开钢网时一定要将 WIFI 模块焊盘的孔开大，请按 1 比 1 再向外扩大 0.7Mm 比例来开，厚度按 0.12Mm。
- 2、WIFI 模块在上线贴片前一定要烘烤 12 小时以上，温度在 120 度  $\pm 5$  度。
- 3、烘烤 OK 后建议马上上线，不要一烘烤 OK 后就将全部 WIFI 模块拿出烘烤箱。建议每小时贴多少拿多少出来。
- 4、有需要拿 WIFI 模时一定要不要光着手去拿 WIFI 模块，一定要戴上手套及静电环。
- 5、过炉温度要根据客户主板的大小而定，一般像贴在平板电脑上 250 $\pm 5$  度。