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**RF-LINK INTERNATIONAL LIMITED**

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# **RL-UM12BS V1.2**

## **Product Specifications**

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

**Version: V1.2**

## 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

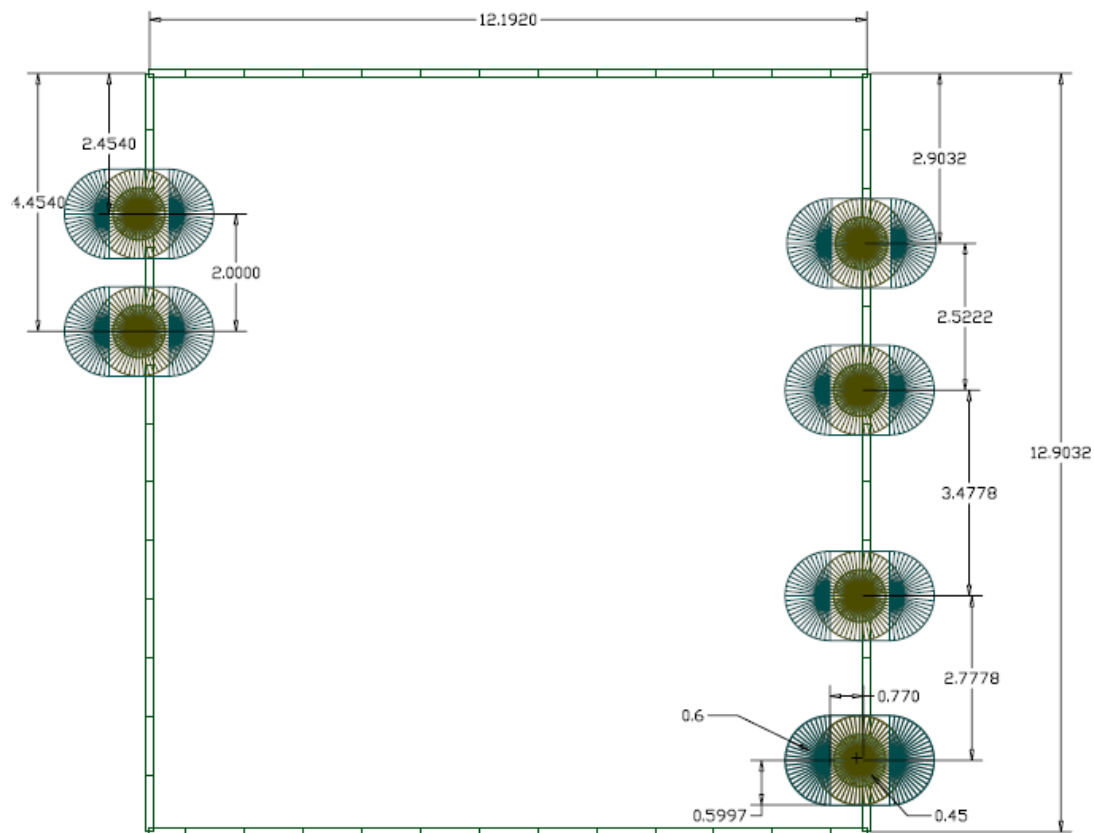
- \* Operates in 2.4 GHz frequency bands
- \* 1x1 MIMO technology improves effective throughput and range existing 802.11 b/g products
- \* Data rates: up to 150Mbps
- \* 802.11e-compatible bursting and I standards
- \* BPSK, QPSK, 16 QAM, 64 QAM modulation schemes
- \* WEP, TKIP, and AES, WPA, WPA2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

# General Specification

Model	RL-UM12BS V1.2
Product Name	WLAN 11n USB module
Major Chipset	Realtek RTL8188EUS
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) 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
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 Maximum power dissipation in 80MA
Operating Temperature	-20 至 +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

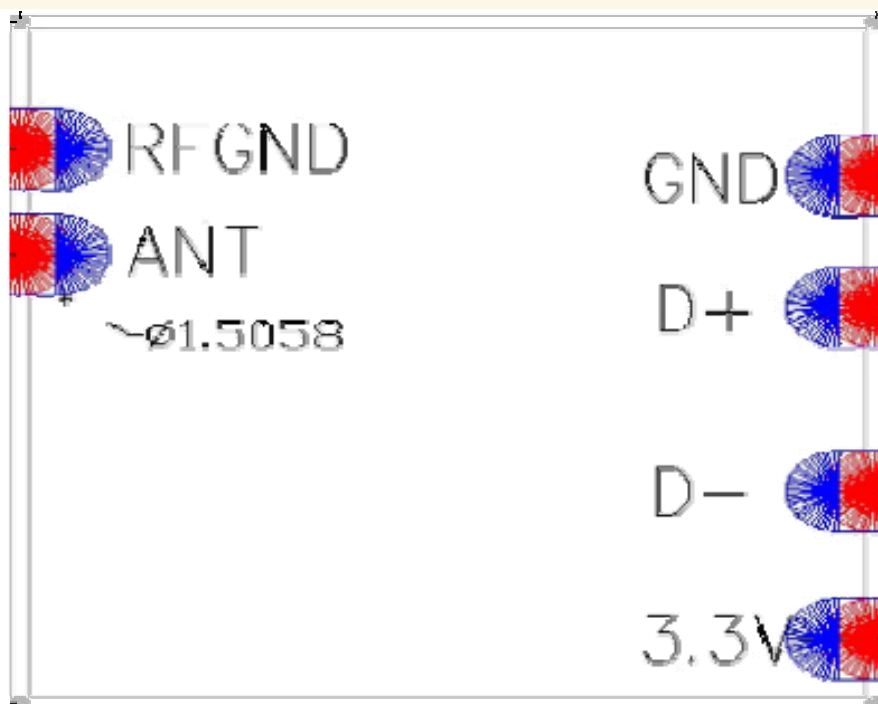


## Dimensions:



The PCB tolerances within + / -0.2 or so

## PIN Definition

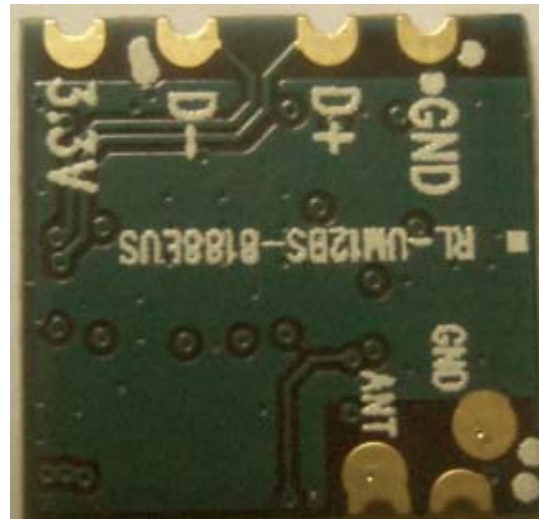
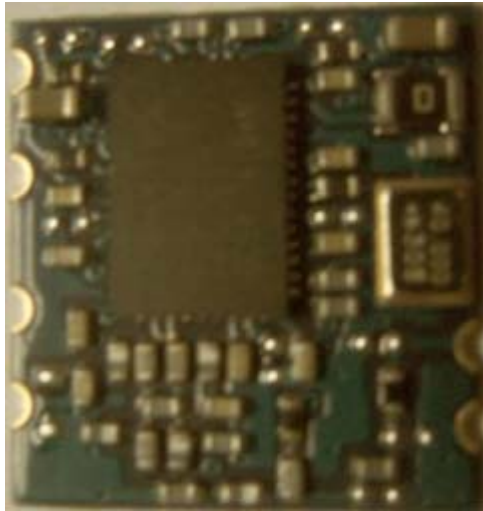




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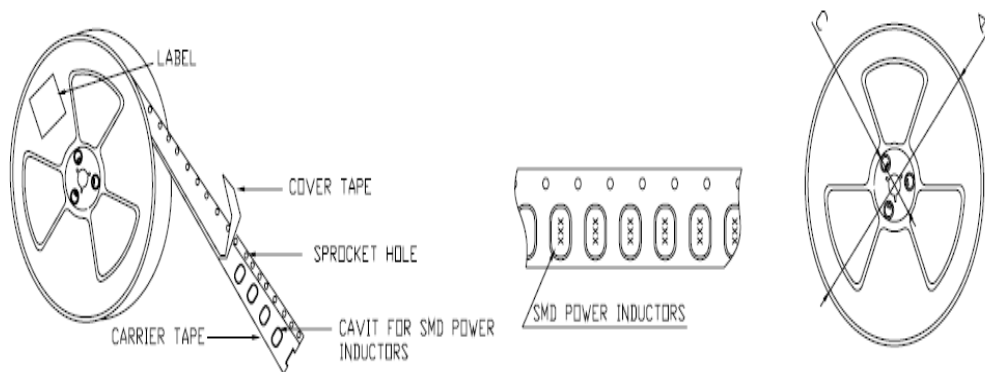
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## Physical map



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 Appearance Figure





## 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

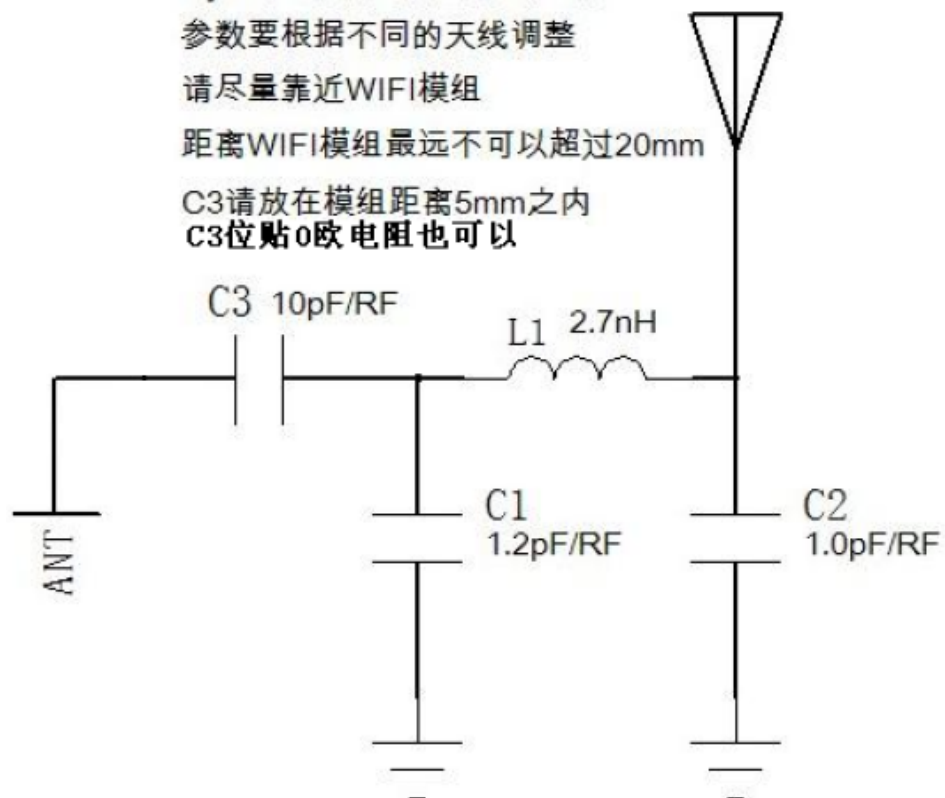
参数要根据不同的天线调整

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





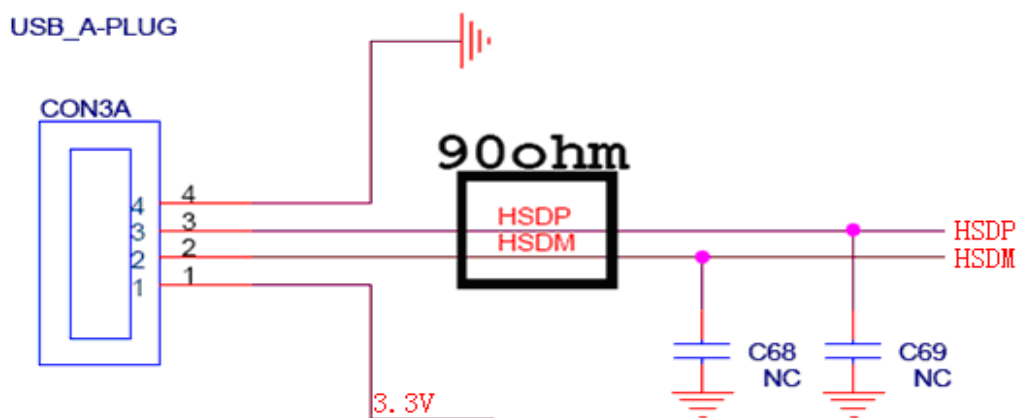
## DC Characteristics

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	-	-	400	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		65		MA
3.3V Current Consumption	Icc33rx	OFDM 54M		70		MA
<b>Transmission Biggest transmission test</b>						
3.3V Current Consumption	Icc33tx	H40 MCS7		80		MA
3.3V Current Consumption	Icc33tx	OFDM 54M		85		MA
<b>The depth waits for an opportunity</b>	Icc33tx/rx			2		MA
<b>Deep sleep</b>	Ic33tx/rx			2		MA

## USB interface electrical characteristics



Two root go line do difference, but also required to make 90 0 the impedance test

建议在电源输入端留一个电源开关，每次开关卡时可以做一个上电断电的作用。可以使WIFI复位。就不会有打开WIFI出错的现象了。





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