

SPECIFICATIONS

IEEE 802.11 b/g/n 2.4GHz 1T1R

WIFI Module

RL-UM12BS-8188ETV

(WIFI Module)

Overview

RL-UM12BS-8188ETV 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.

Antenna is FPCB Antenna, antenna gain is 1dBi.

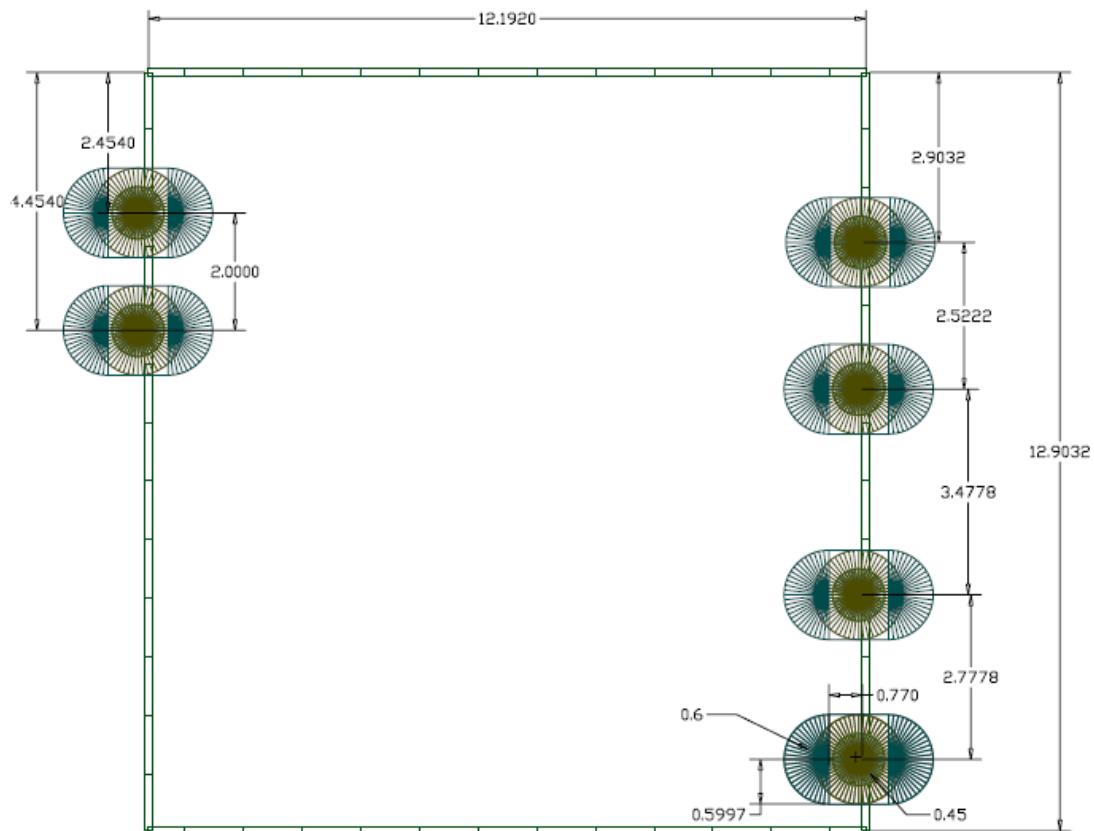
Features

- * 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

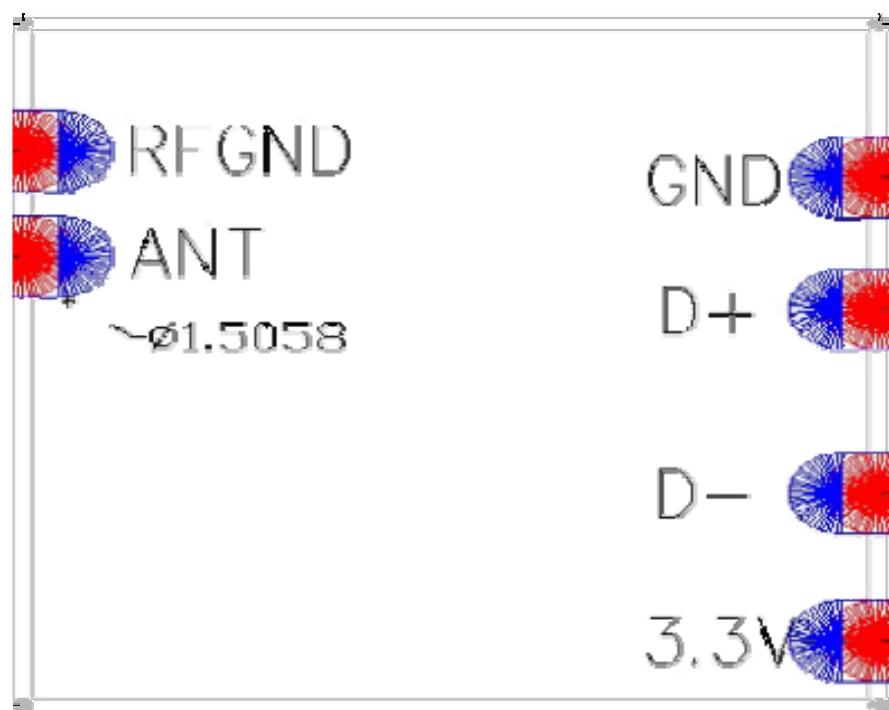
Model	RL-UM12BS-8188ETV
Product Name	WIFI module
Major Chipset	Realtek RTL8188ETV
Standard	802.11b/g/n, 802.3, 802.3u
Data Transfer Rate	1,2,5.5,6,11,12,18,22,24,30,36,48,54,60,90,120 and maximum of 150Mbps
Modulation Method	BPSK/ QPSK/ 16-QAM/ 64-QAM
Frequency Band	2.412~2.462 GHz
Spread Spectrum	IEEE 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
Operating Channel	11: (Ch. 1-11) – United States 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 Maximum power dissipation in 150MA
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:

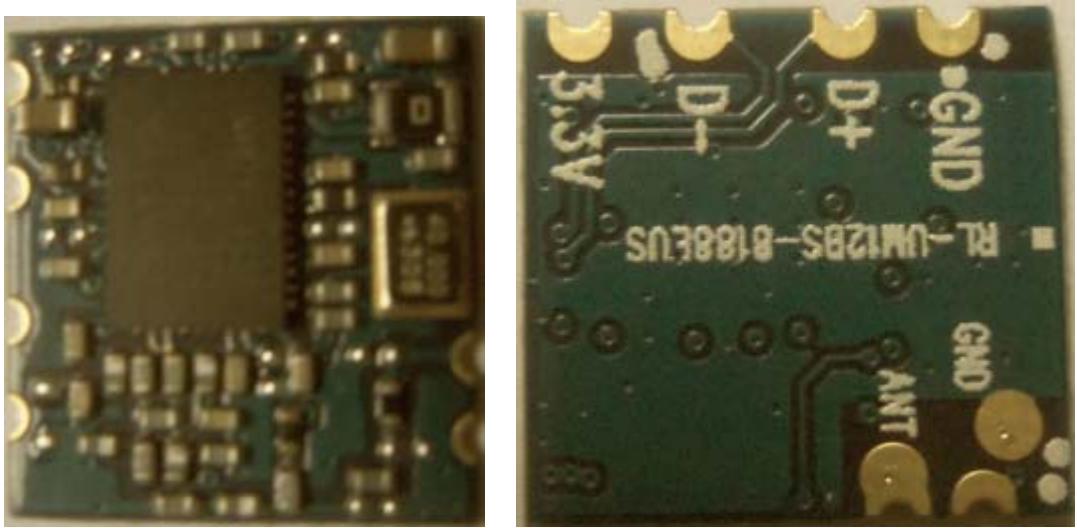


The PCB tolerances within + / -0.2 or so

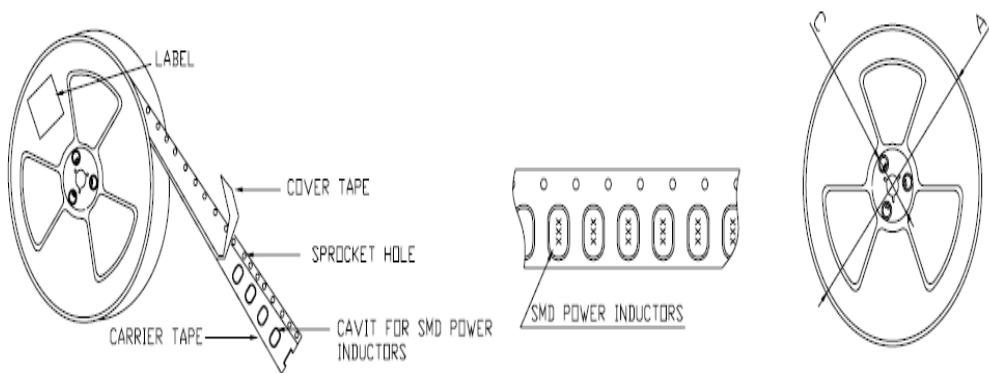
PIN Definition



Physical map



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

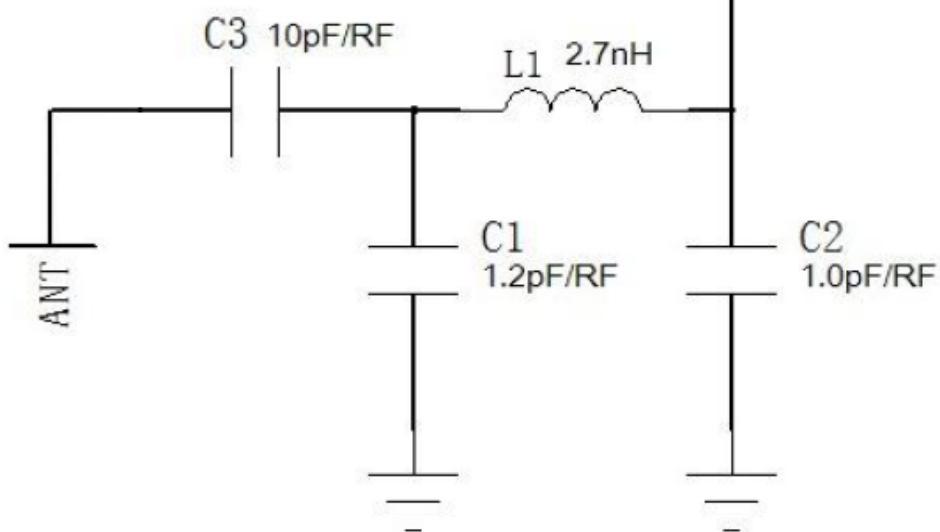
参数要根据不同的天线调整

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



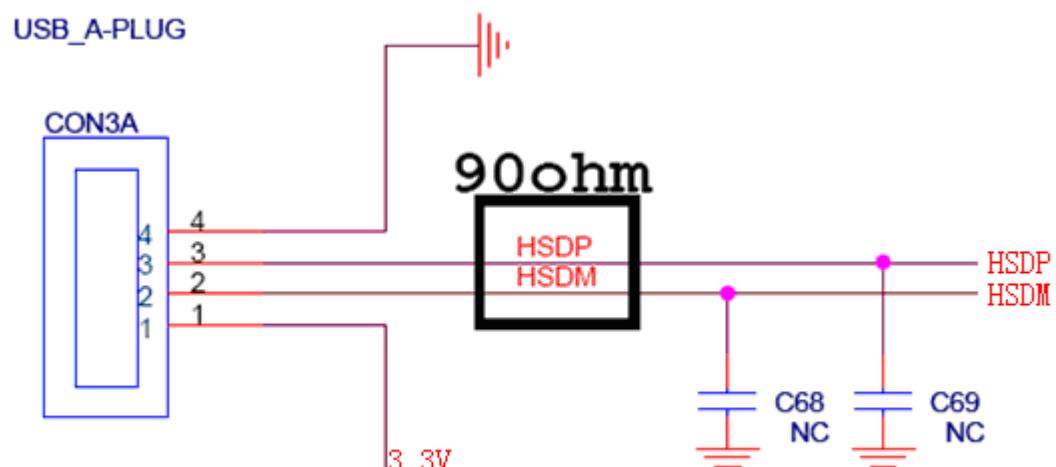
DC Characteristics

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	-	-	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
Receiving Tests the biggest receive						
3.3V Current Consumption	Icc33rx	H40MCS7		90		MA
3.3V Current Consumption	Icc33rx	OFDM 54M		100		MA
Transmission Biggest transmission test						
3.3V Current Consumption	Icc33tx	H40 MCS7		140		MA
3.3V Current Consumption	Icc33tx	OFDM 54M		170		MA
The depth waits for an opportunity	Icc33tx/rx			2		MA
Deep sleep	Ic33tx/rx			2		MA

USB interface electrical characteristics



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

FCC ID: 2AAH7UM12BS8188ETV

Model name: 802.11n 150M Ultra Wireless LAN Router

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.

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

RF 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.

This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.

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.

The module must not be modified in any way. Coupling of external circuitry must not bypass the provided connectors.

End product must be externally labeled with "Contains FCC ID: 2AAH7UM12BS8188ETV" The integrator must not provide any information to the end-user on how to install or remove the module from the end-product.