

TL8188ETA

WLAN11b/g/nUSBmodule(1T1R)

Product Specifications

Version: V1.2

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Overview

TL8188ETA 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.

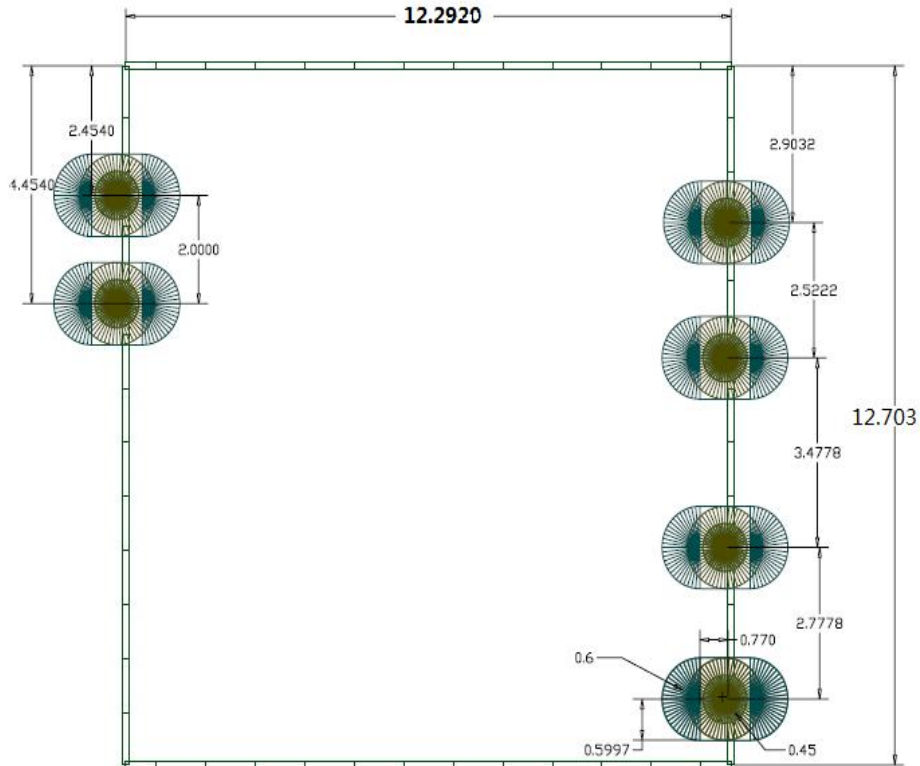
Features

- * 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

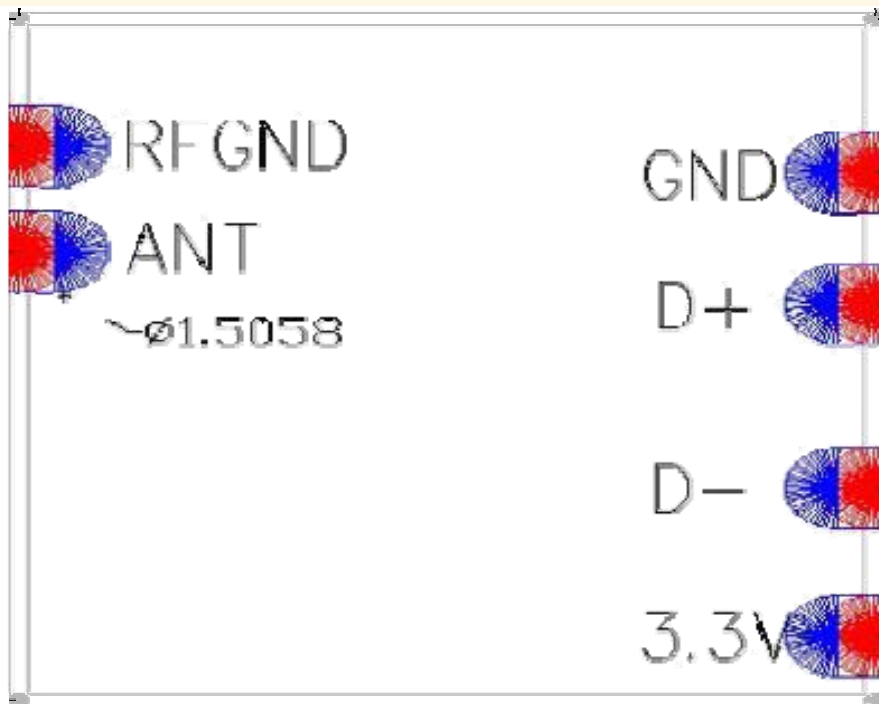
Model	TL8188ETA
Product Name	WLAN 11n USB module
MajorChipset	RealtekRTL8188ETV
Standard	802.11b/g/n, 802.3, 802.3u
Data Transfer Rate	1,2,5.5,6,11,12,18,22,24,30,36,48,54,60,90,120 and maximum of 150Mbps
Modulation Method	BPSK/ QPSK/ 16-QAM/ 64-QAM
Frequency Band	2.4 ~ 2.4835 GHz ISM Band
Spread Spectrum	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. 7032x12.2920x1.6mm(LxWxH)+-0.2MM

Dimensions:

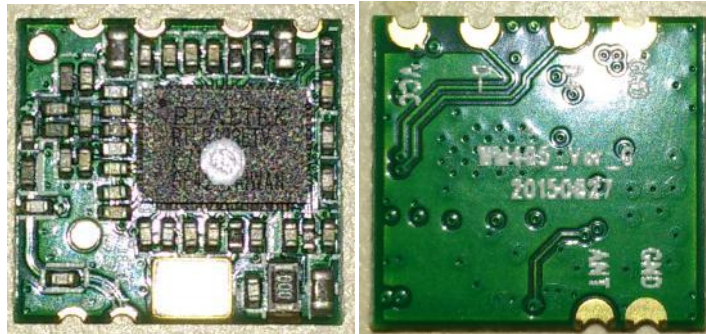


The PCB tolerances within + / -0.2 or so

PIN Definition



Physical map

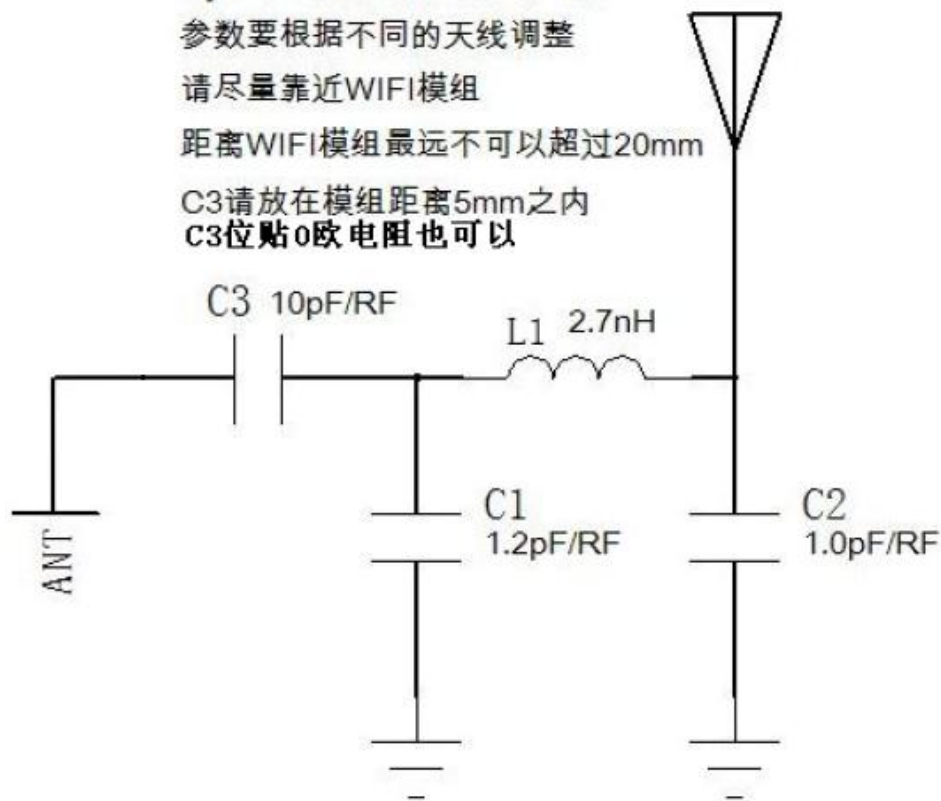


External antenna reference design

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



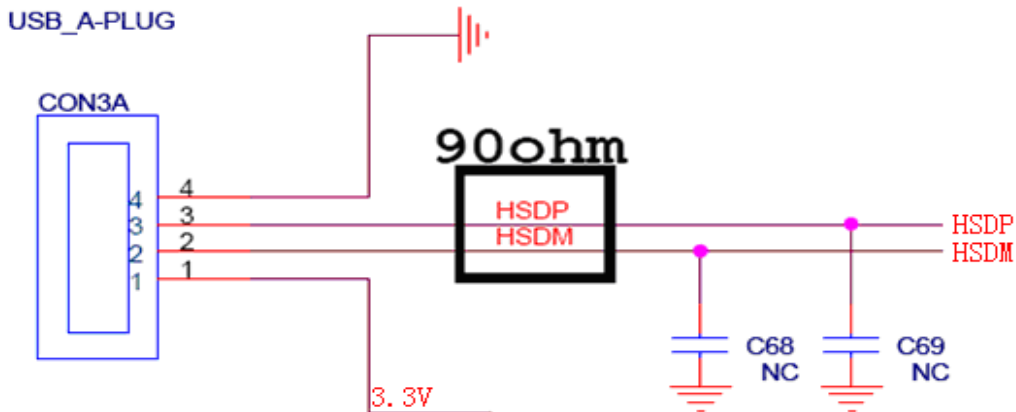
DC Characteristics

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
Receiving Tests the biggest receive						
3.3V Current Consumption	Icc33rx	H40MCS7		65		MA
3.3V Current Consumption	Icc33rx	OFDM 54M		70		MA
Transmission Biggest transmission test						
3.3V Current Consumption	Icc33tx	H40 MCS7		80		MA
3.3V Current Consumption	Icc33tx	OFDM 54M		85		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 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。

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、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。
- 3、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+-5 度。

关于模块包装，储存及使用管制应注意事项如下:

1.模块的卷盘加真空包装之储存期限:

1) .保存期限: 12 个月, 储存环境条件: 温度在: <40°C,

相对湿度: <90%R.H

2.模块真空包装拆封后, 组装之时限:

1) .检查湿度卡: 显示值应小于 30% (蓝色), 如: 30%~40%(粉红色) 或者大于 40% (红色) 表示模块已吸湿气。

2) .工厂环境温度湿度管制: $\leq 30^{\circ}\text{C}$, $\leq 60\%R.H$ 。

3) .拆封后, 车间的保存寿命为 168 小时。

3.拆封后, 如未在 168 小时内使用完时:

1) .模块须重新烘烤, 以除去模块吸湿问题。

2) .烘烤温度条件: 125°C, 8 小时。

3) .烘烤后, 放入适量的干燥剂再密封包装。