

HK NATER TECH LIMITED

RL-UM02B-8192EU模块承认书

客户名称

Customer: _____

样品名称

Description: **RL-UM02B-8192EU 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

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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!

SPECIFICATIONS

IEEE 802.11 b/g/n 2.4GHz

Wi-Fi 2T2R Module

RL-UM02B-8192EU

Version: V1.0

Overview

General

- CMOS MAC, Baseband MIMO PHY, and RF in a single chip for 802.11b/g/n compatible WLAN
- Complete 802.11n MIMO solution for 2.4GHz band
- 2x2 MIMO technology for extended reception robustness and exceptional throughput
- Maximum PHY data rate up to 144.4Mbps using 20MHz bandwidth, 300Mbps using 40MHz bandwidth
- Compatible with 802.11n specification
- Backward compatible with 802.11b/g devices while operating at 802.11n data rates

Host Interface

- Complies with USB Specification Revision 2.0
- USB bridge for RTL8761 Bluetooth connection

Standards Supported

- 802.11e QoS Enhancement (WMM, WMM-SA Client mode)
- 802.11h TPC, Spectrum Measurement
- 802.11k Radio Resource Measurement
- 802.11i (WPA, WPA2). Open, shared key, and pair-wise key authentication services

MAC Features

- Frame aggregation for increased MAC efficiency (A-MSDU, A-MPDU)
- Low latency immediate High-Throughput Block Acknowledgement (HT-BA)
- Long NAV for media reservation with CF-End for NAV release
- PHY-level spoofing to enhance legacy compatibility
- MIMO power saving mechanism
- Channel management and co-existence
- Multiple BSSID feature allows the RTL8192EU to assume multiple MAC identities when used as a wireless bridge
- Transmit Opportunity (TXOP) Short Inter-Frame Space (SIFS) bursting for higher multimedia bandwidth

Peripheral Interfaces

- Configurable Bluetooth Coexistence Interface

PHY Features

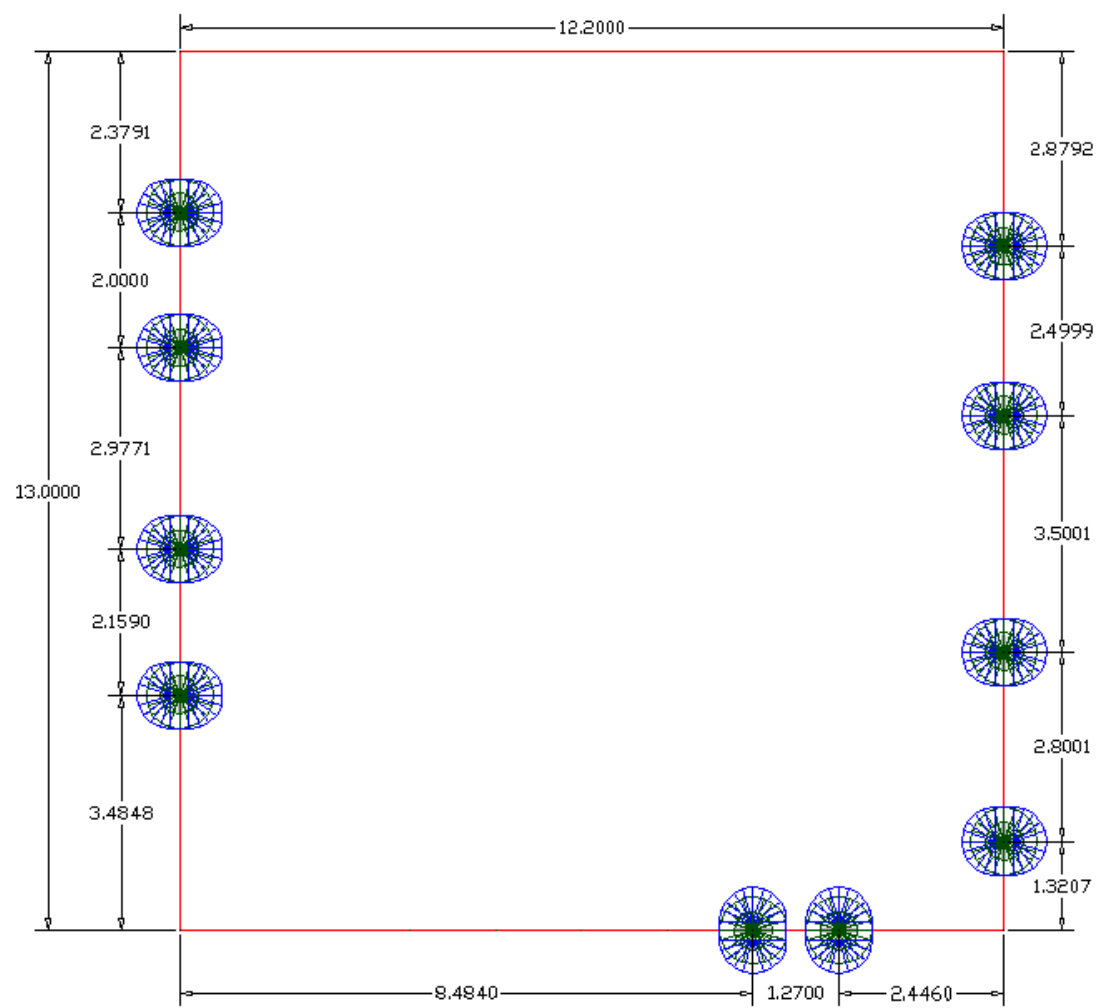
- 802.11n MIMO OFDM
- Two Transmit and Two Receive path (2T2R)
- 20MHz and 40MHz bandwidth transmission
- Short Guard Interval (400ns)
- Sounding packet
- Low Density Parity Check (LDPC) to enhance link robustness over range
- Transmit Beamforming
- DSSS with DBPSK and DQPSK, CCK modulation with long and short preamble
- OFDM with BPSK, QPSK, 16QAM, and 64QAM modulation.
Convolutional Coding Rate: 1/2, 2/3, 3/4, and 5/6
- Maximum data rate 54Mbps in 802.11g and 300Mbps in 802.11n
- OFDM receive diversity with MRC using up to 2 receive paths. Switch diversity used for DSSS/CCK
- Selectable digital transmit and receive FIR filters
- Programmable scaling in transmitter and receiver to trade quantization noise against increased probability of clipping
- Fast receiver Automatic Gain Control (AGC)
- On-chip ADC and DAC

General Specification

Model	RL-UM02B-8192EU-V1.0
Product Name	WLAN 11b/g/n USB module
Major Chipset	Realtek RTL8192EU
Standard	IEEE802.11n 、 IEEE 802.11g、 IEEE 802.11b
Data Transfer Rate	1,2,5.5,6,11,12,18,22,24,30,36,48,54,60,90,120 and maximum of 300Mbps
Modulation Method	DSSS,DBPSK, DQPSK, CCK and OFDM (BPSK/QPSK/16-QAM/ 64-QAM)
Frequency Band	2.485GHz
Spread Spectrum	IEEE 802.11b: DSSS (Direct Sequence Spread Spectrum) ,CCK(Com plem e ntary Code Keying) IEEE 802.11g/n:OFDM (Orthogonal Frequency Division Multiplexing)
RF Output Power	< 18dBm@11b,< 14dBm@11g ,< 13dBm@11n
Receiver Sensitivity	11Mbps -86dBm@8%,135Mbps -73dBm@10%,300Mbps -66dBm@10%
Operation Range	Up to 180 meters in open space
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	3.3V
Operating Temperature	-10 ~ 70°C ambient temperature
Storage Temperature	-10 ~ 70°C ambient temperature
Humidity	5 to 90 % maximum (non-condensing)
Dimension	13x12.2x1.9mm(LxWxH)+-0.2MM

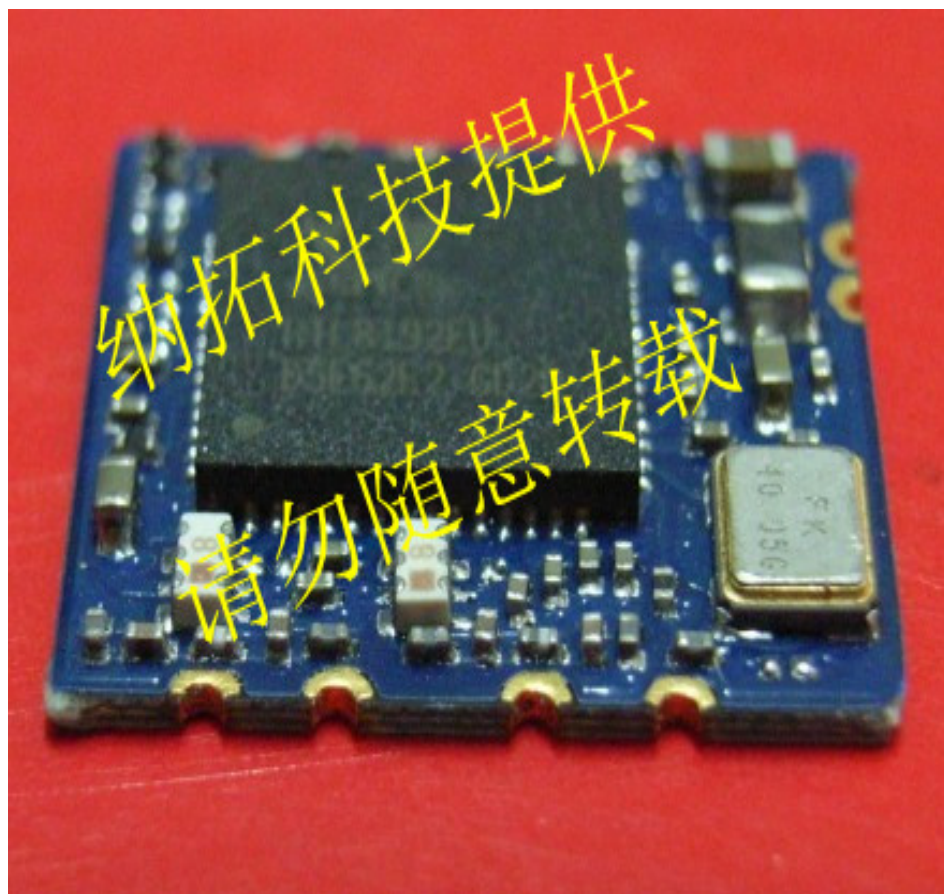
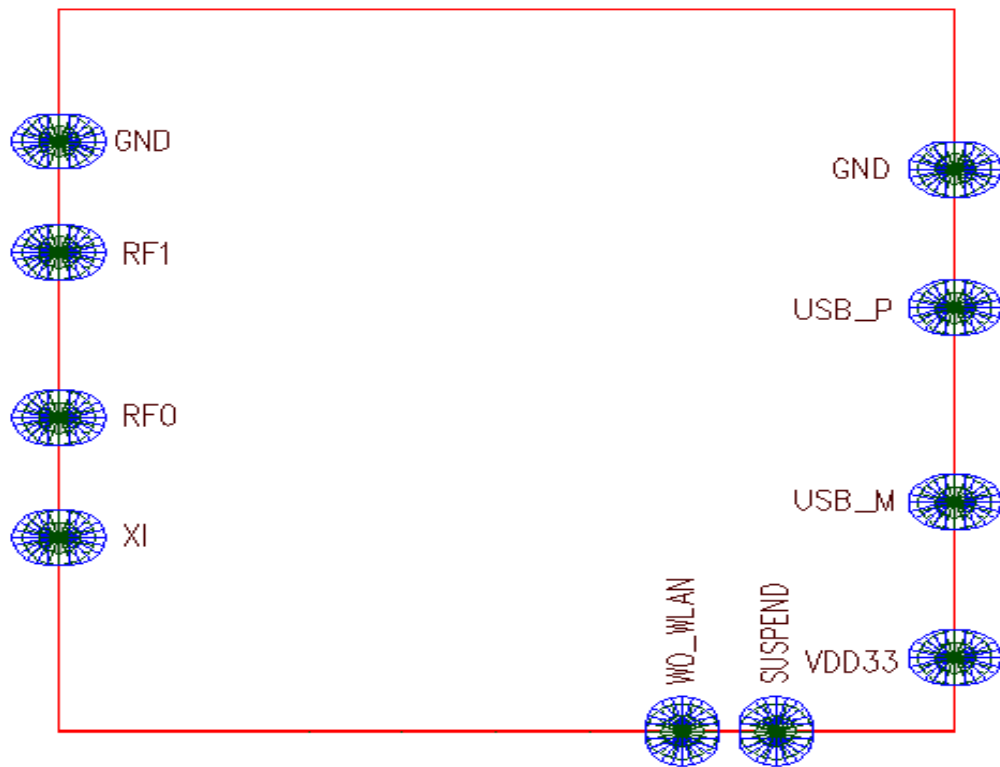
Mechanical

Dimensions (mm)	Length	Width	Height
	13 (Tolerance:±0.2mm)	12.2 (Tolerance:±0.2mm)	1.9 (Tolerance:±0.2mm)

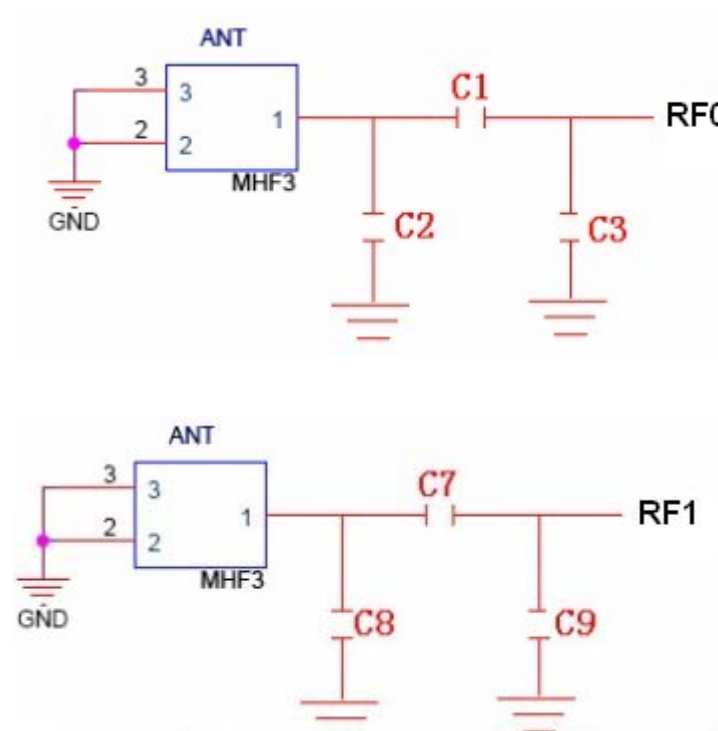


MODULE PIN ASSIGNMENT

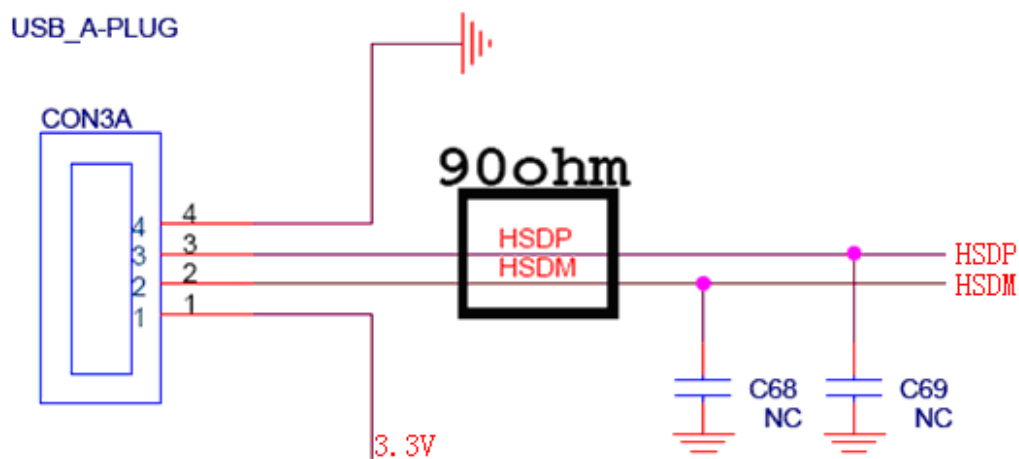
Pin	Function	Pin	Function
H1	GND	H6	USB_P
H2	RF1	H7	USB_M
H3	RF0	H8	VDD33
H4	XI	H9	SUSPEND
H5	GND	H10	WO_WLAN



WIFI RF Circuit reference pictures



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。

Environmental Requirements and Specifications TP Content

1 Temperature

1.1 Operating Temperature Conditions

The product shall be capable of continuous reliable operation when operating in ambient temperature of -10°C to +70°C.

1.2 Non-Operating Temperature Conditions

Neither subassemblies shall be damaged nor shall the operational performance be degraded when restored to the operating temperature when exposed to storage temperature in the range of -45°C to +135°C.

2 PCB Bending

The PCB bending spec shall be keep planeness under 0.1mm for both NATER and end assembly customer.

3 Handling environment

3.1. ESD

Symbol	Ratings	Max	Unit
V_{ESD} (HBM)	Electrostatic discharge voltage (human body model)	2000	V
V_{ESD} (CDM)	Electrostatic discharge voltage (charge device model)	500	

Please handle it under ESD protection environment.

3.2. Terminals

The product is mounted with motherboard through half hole. In order to prevent poor soldering, please do not touch the pad by hand.

3.3. Falling

It will cause damage on the mounted components when the product is falling or receiving drop shock. It may cause the product mal-function.

4 Storage Condition

4.1 Moisture barrier bag before opened

Moisture barrier bag must be stored under 30 degree C, humidity under 85% RH. The calculated shelf life for the dry packed product shall be a 12 months from the bag seal date.

4.2. Moisture barrier bag open

Humidity indicator cards must be blue, <30%.

5 Baking Condition

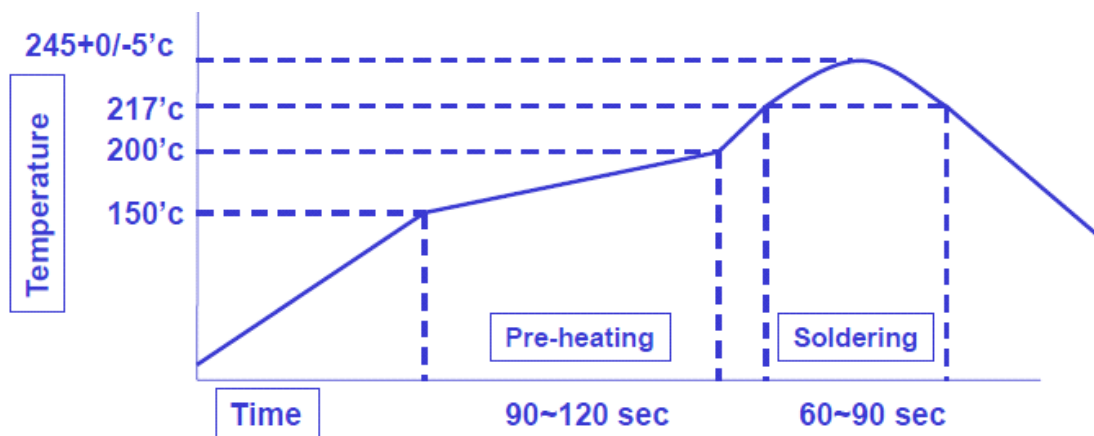
Products require baking before mounting if

- a) humidity indicator cards reads >30%
- b) temp <30 degree C, humidity < 70% RH, over 96 hours

Baking condition: 90 degree C, 12-24 hours

Baking times: 1 time

6 Soldering and reflow condition



- ◆ Follow the solder paste composition to set the reflow profile
- ◆ Lead free solder paste(SAC305, SAC387 or SAC405) reflow profile setting as above :
 - Ramp up rate (to Peak temp) : < 1.2°C/sec, typically
 - Time above Liquidus(217°C) : 60~90Sec
 - Peak Temp : 245+0/-5°C
 - Ramp-down rate (Peak to RT) : 1~3°C/sec, typically