

HK NATER TECH LIMITED

WL-UM01P-3070 Specification

Customer: _____

Description: WL-UM01P-3070-V1.1

Customer P/N: _____

Date: _____

Customer		
Approve	Auditing	Admit

Provider		
Approve	Auditing	Admit

Customer:

Add:

Tel:

Fax:

Attn:

E-mail:

Provider:HK NATER TECH LIMITED

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SPECIFICATIONS

IEEE 802.11 b/g/n 2.4GHz

Wi-Fi 1T1R

WL-UM01P-3070-V1.1

USB MODULE

1.General Description

The RT3070 is a highly integrated MAC/BBP and 2.4 GHz RF single chip with 150Mbps PHY rate supporting. It fully complies with IEEE 802.11n draft 8.0 and IEEE 802.11 b/g feature rich wireless connectivity at high standards, delivers reliable, cost-effective, throughput from an extended distance. Optimized RF architecture and baseband algorithms provide superb performance and low power consumption. Intelligent MAC design

Deploys a high efficient USB engine and hardware data processing accelerators without overloading the host processor. The RT3070 is designed to support standard based features in the areas of security, quality of service and international regulation, giving end users the greatest performance anytime in any circumstance.

Features

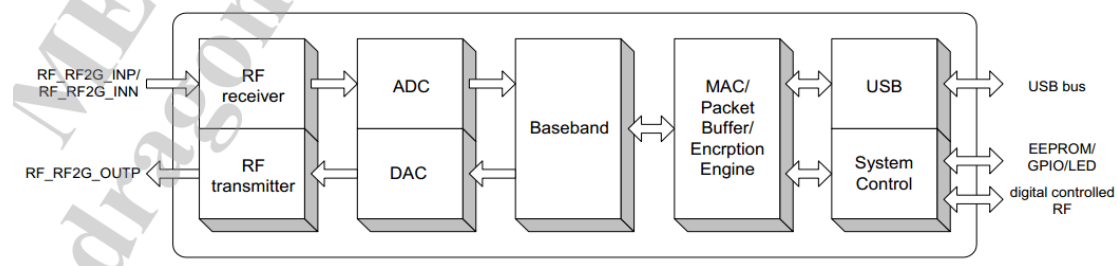
- CMOS Technology with RF, Baseband, and MAC Integrated.
- 1T1R Mode with 150Mbps PHY Rate for Both Transmit and Receiving.
- Legacy and High Throughput Modes
- 20MHz/40MHz Bandwidth
- Reverse Direction Grant Data Flow and Frame Aggregation
- WEP 64/128, WPA, WPA2, TKIP, AES
- QoS-WMM, WMM-PS
- WPS,PIN,PBC
- Multiple BSSID Support
- USB 2.0
- Cisco CCX Support
- Bluetooth Co-existence
- Low Power with Advanced Power Management
- Operating Systems - Windows XP 32/64, 2000, Vista 32/64 , Linux, Macintosh

2.General Specification

Model	WL-UM01P-3070-V1.1
Product Name	WLAN 11b/g/n USB2.0 module
Major Chipset	RT3070
Standard	IEEE802.11n 、 IEEE 802.11g、 IEEE 802.11b、 IEEE 802.11j、 IEEE 802.11e
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	DSSS,DBPSK, DQPSK, CCK and OFDM (BPSK/QPSK/16-QAM/ 64-QAM)

Frequency Band	2.400GHz ~ 2.4835 GHz
Operation Range	Up to 180 meters in open space
Bus Interface	USB2.0
Operating Channel	WiFi 2.4GHz: 11: (Ch. 1-11) – United States; 13: (Ch. 1-13) – Europe ; 14: (Ch. 1-14) – Japan
Power Consumption	5V I/O supply voltage
Operating Temperature	-10 ~ +70° C ambient temperature
Storage Temperature	-10 ~ 70°C ambient temperature
Humidity	5 to 90 % maximum (non-condensing)
Dimension	39.2 x 15.0 x 3.03mm (LxWxH) +-0.2MM

3.Block Diagram



4.Power Supply DC Characteristics

Parameters	Symbol	Parameter	Min	Typ	Max	Units
3.3V Supply Voltage	Vcc33		3.0	3.3	3.6	V
1.2V Supply Voltage	Vcc12		1.14	1.2	1.4	V
Receiving						
3.3V Current Consumption	Icc33rx	HT40 MCS7		37		mA
1.2V Current Consumption	Icc12rx	HT40 MCS7		243		mA
Transmission						
3.3V Current Consumption	Icc33tx	HT40 MCS7		31		mA
1.2V Current Consumption	Icc12tx	HT40 MCS7		124		mA

DC Characteristics

Module	Voltage	Current Consumption (linking)
WL-UM03P-3070-V1.1	5V	(上网或者看电影时的功耗)

5. Electrical Specifications

1) RF Characteristics for IEEE802.11b (11Mbps mode unless otherwise specified)

Items	Contents			
Specification	IEEE802.11b			
Mode	CCK 11 Mbps			
Channel frequency	2412 ~ 2484 MHz			
RX (per≤85 dBm@8%)	-87dBm			
Freq err limit	±13PPM			
TX Characteristics	Min.	Typ.	Max.	Unit
Power Level (21±1 dBm)		21		dBm
EVM (≤-18)		-18		dB

2) RF Characteristics for IEEE802.11g (54Mbps mode unless otherwise specified)

Items	Contents			
Specification	IEEE802.11g			
Mode	OFDM 54 Mbps			
Channel frequency	2412 ~ 2484 MHz			
RX (per≤70 dBm@10%)	-74dBm			
Freq err limit	±13PPM			
TX Characteristics	Min.	Typ.	Max.	Unit
Power Level (19±1dBm)		19		dBm
EVM (≤-25)		-25		dB

3) RF Characteristics for IEEE802.11n (BW20_MCS7)

Items	Contents			
Specification	IEEE802.11n (BW20_MCS7)			
Mode	OFDM 65 Mbps			
Channel frequency	2412 ~ 2484 MHz			
RX (per≤65 dBm@10%)	-69 dBm			
Freq err limit	±13PPM			
TX Characteristics	Min.	Typ.	Max.	Unit
Power Level (18±1 dBm)		18		dBm
EVM (≤-27)		-27		dB

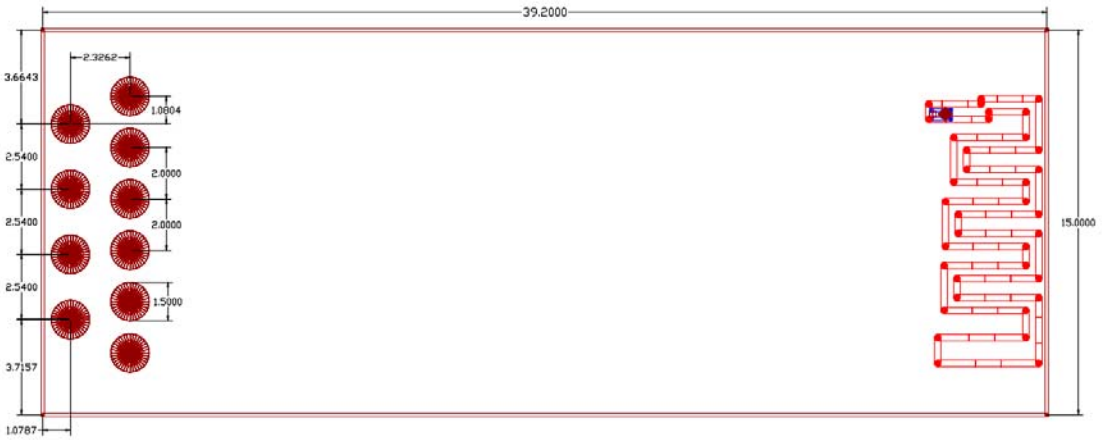
4) RF Characteristics for IEEE802.11n (BW40_MCS7)

Items	Contents			
Specification	IEEE802.11n (BW40_MCS7)			
Mode	OFDM 135 Mbps			
Channel frequency	2412 ~ 2484 MHz			
RX (per≤65 dBm@10%)	-69 dBm			
Freq err limit	±13PPM			

TX Characteristics	Min.	Typ.	Max.	Unit
Power Level (18±1 dBm)		18		dBm
EVM (≤-27)		-27		dB

6.Mechanical

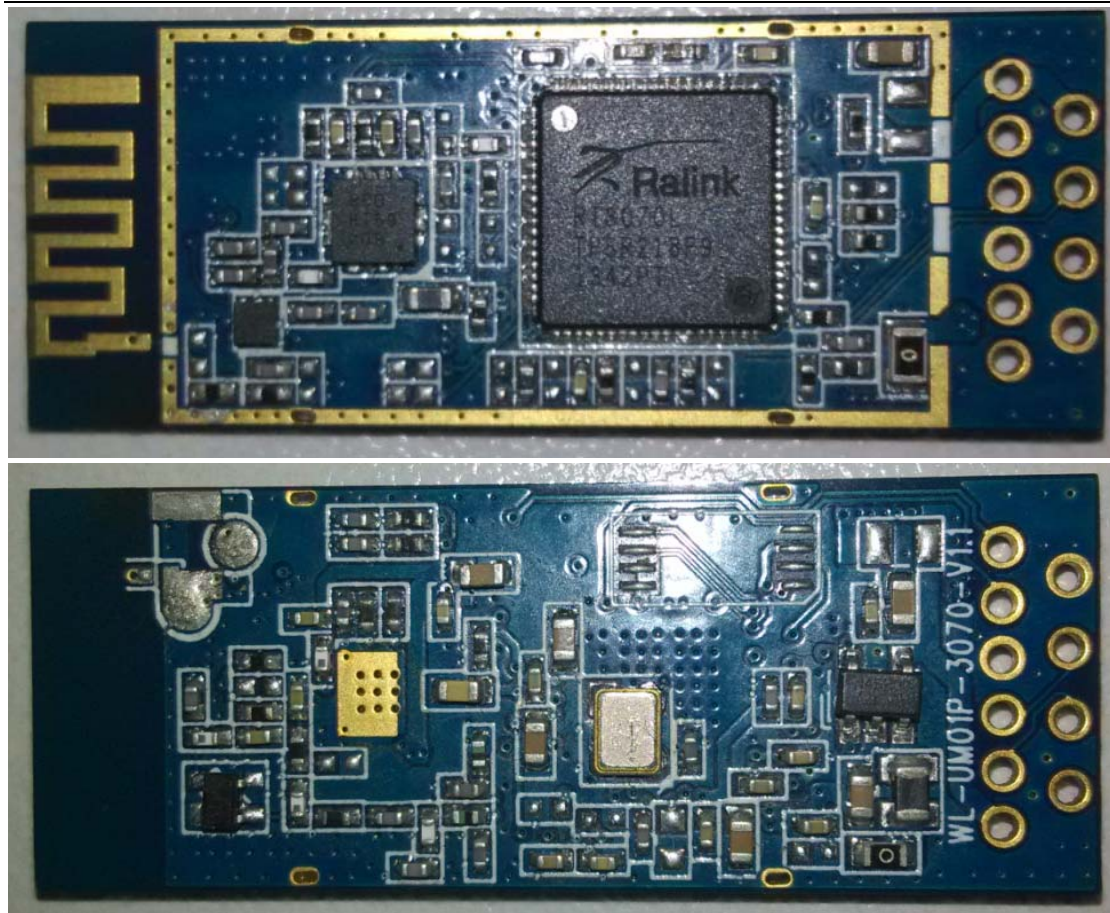
Dimensions (mm)	Length	Width	Height
	39.2 (Tolerance:±0.2mm)	15.0 (Tolerance:±0.2mm)	3.03 (Tolerance:±0.2mm)



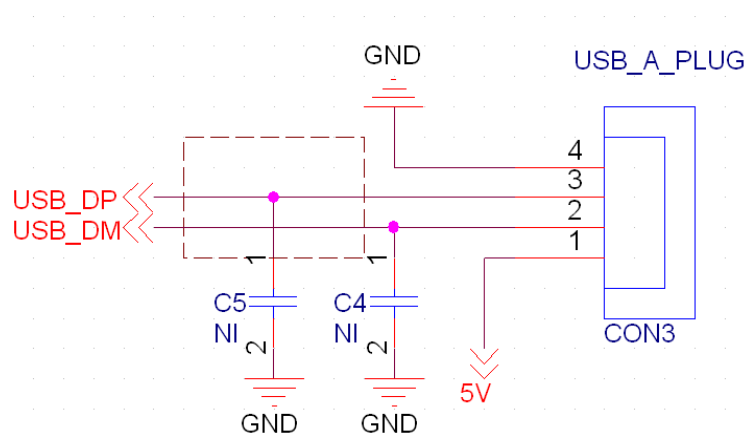
8.Module Pin Assignment



Pin	Function	Description
1	NC	NC
2	NC	NC
3	GND	Ground
4	UDP	High-Speed USB D+ Signal
5	UDM	High-Speed USB D- Signal
6	5V	VDD5V for Digital IO



9. interface electrical characteristics



注: 1.USB 数据线需要做 90Ohm 的阻抗。

2.建议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
可以使用 wifi 复位, 就不会有打不开 wifi 的错误现象出现。

Note:1.Two root go line do difference, but also required to make 90Ohm the impedance test.e
get lock can do

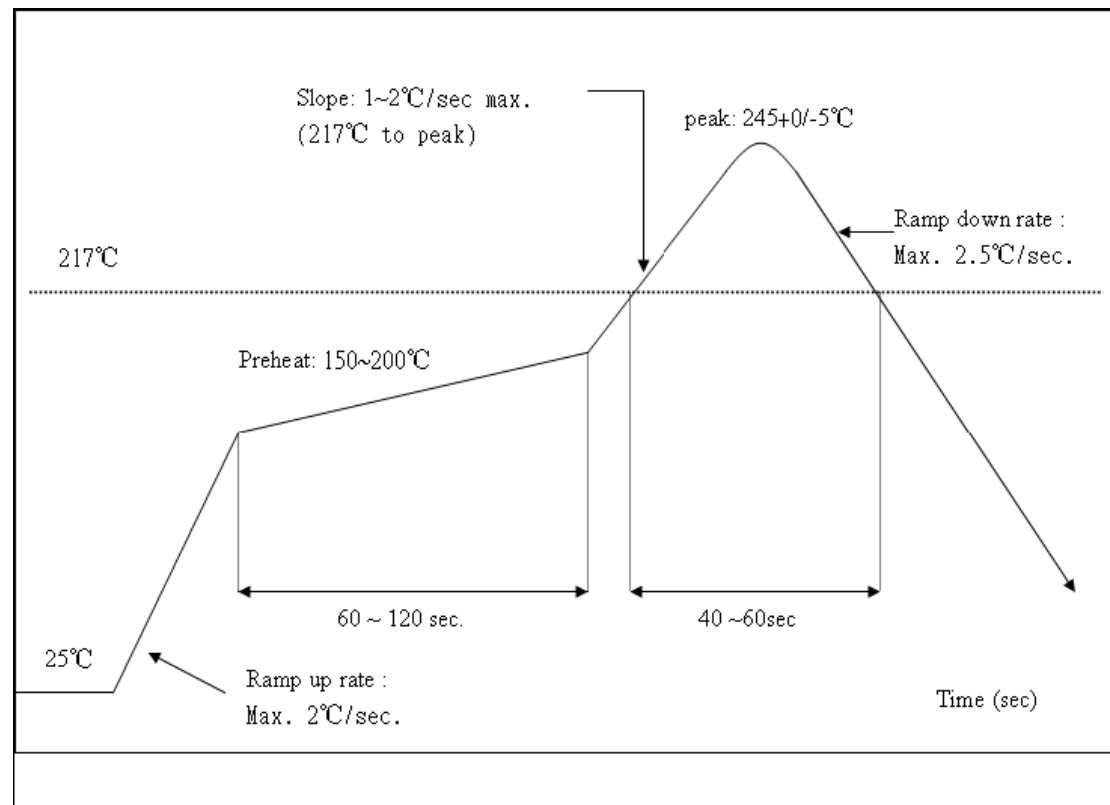
2.Suggested that leave a power switch power supply input terminal, every tim a electric power
is on

10.Recommended Reflow Profile

Referred to IPC/JEDEC standard.

Peak Temperature : <250°C

Number of Times : ≤2 times



ENVIRONMENTAL

Operating

Operating Temperature: 0°C to +70 °C
Relative Humidity: 5-90% (non-condensing)

Storage

Temperature: -40°C to +80°C (non-operating)
Relevant Humidity: 5-95% (non-condensing)

MTBF caculation

Over 150,000hours

11. Wireless module before the SMT note:

■ When customers Open stencil must be sure the hole bigger to the Wireless module plate, please press 1 to 1 and 0.7 mm is widened to open outward, the thickness of 0.12 mm.

■ Can't get the wifi module bare hands when needs, must we wear the gloves and static ring.

3. The furnace temperature according to the size of the customer the mainboard, generally like to stick on a tablet standard temperature of 250 ± 5 , can do 260 ± 5 .

Storage and use Wifi module control should pay attention to the following matters:

3. Module of the storage life of vacuum packaging:

1-1. Storage life: 12 months. Storage conditions: $<40^{\circ}\text{C}$. Relative humidity: $<90\%\text{R.H.}$

1-2. After this bag is opened, devices that will be subjected to infrared reflow, vapor-phase reflow, or equivalent processing must be:

1-3. Check the humidity card: stored at $\leq 20\%\text{RH}$. If: $30\sim 40\%$ (pink) or greater than 40% (red). Labeling module has moisture absorption.

① Mounthed within 168 hours at factory conditions of: $t \leq 30^{\circ}\text{C}$, $\leq 60\%\text{R.H.}$

② Once opened, the workshop the preservation of life for 168 hours.

1-4. If baking is required, devices may be baked for:

■ Modules must be to remove module moisture problem.

■ Baking temperature: 125°C , 8 hours.

■ After baking, put proper amount of desiccant to seal packages.

1-5. The actual number of module vacuum packing which is based on the actual number of packages to the customer requirements.

2. Module reel packaging items as follows.

2-1. Storage life: 12 months. Storage conditions: $<40^{\circ}\text{C}$. Relative humidity: $<90\%\text{R.H.}$

2-2. Module apart packing after 168 hours. To launch patch need to bake, to remove the module hygroscopic, baking temperature conditions: 125°C , 8 hours.

11. Wifi 模块贴片装机前注意事项:

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 比例开钢网, 厚度按 0.12mm.

2. 有需要拿 wifi 模块时不可以光手去拿, 一定要戴上手套以及静电环.

3. 过炉温度要根据客户主板的大小而定, 一般像平板电脑上的标准温度为 $250 \pm 5^{\circ}$, 也可以做到 $260 \pm 5^{\circ}$

Wifi 模块储存及使用管制应注意事项如下:

1. 模块的真空包装之储存期限:

1-1. 保存期限: 12个月, 储存环境条件: 温度在: $<40^{\circ}\text{C}$, 相对湿度: $<90\%\text{R.H.}$

1-2. 模块包装被拆后, SMT 组装之时限:

1-3. 检查湿度卡: 显示值应小于 30% (蓝色), 如: $30\sim 40\%$ (粉红色) 或者大于 40% (红色) 表示模块已吸湿气.

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

■ 拆封后, 车间的保存寿命为 168 小时.

1-4. 如在拆封后的 168 个小时内未使用完, 需要烘烤, 烘烤条件如下:

5. 模块须重新烘烤, 以除去模块吸湿问题.

6. 烘烤温度条件: 125°C , 8 小时.

7. 烘烤后, 放入适量的干燥剂再密封包装.

1-5. 模块真空包装数量以客户要求的实际包装数量为准.

2. 模块卷盘包装事项如下:

2-1. 保存期限: 12个月, 储存环境条件: 温度在: $<40^{\circ}\text{C}$, 相对湿度: $<90\%\text{R.H.}$

2-2. 模块拆开包装 168 小时后, 如要上线贴片需要重新烘烤, 以除去模块吸湿问题, 烘烤温度条件: 125°C , 8 小时.

2-3. 模块卷盘包装以客户要求的实际包装数量为准.

3. 模块托盘包装事项如下:

3-1. 保存期限: 3个月, 储存环境条件: 温度在: $<40^{\circ}\text{C}$, 相对湿度: $<90\%\text{R.H.}$

2-3. The actual number of module reel packing which is based on the actual number of packages to the customer requirements.

3.Module pallet packaging items as follows:

3-1.Storage life: 3 months. Storage conditions:<40℃. Relative humidity:<90%R.H.

3-2.Module if not used within 48 hours, before launch the need for baking, baking temperature: 125 ℃, 8 hours.

3-3. Pallet packaging each plate is 100 PCS.The actual number of module pallet packing which is based on the actual number of packages to the customer requirements.

3-2.模块如在 48 小时内未使用，在上线之前需要进行烘烤，烘烤温度条件：125℃，8 小时。

3-3. 托盘包装每盘为 100pcs，模块托盘包装以客户要求的实际包装数量为准.

注：以上包装方式根据客户要求而定，包装以实际出货为准.