

HK NATER TECH LIMITED

NT-UM02SP模块 承认书

客户名称

Customer: _____

样品名称

Description: NT-UM02SP 模块 (2.4G&5.8G)

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:

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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!

USB Product Specifications

IEEE 802.11 a/ b/g/n 2.4 to 5.8GHz 2T2R WiFi Modul

NT-UM02SP(RTL8192DU)

2013-02-13

Overview

| | |
|--|--|
| <p>General</p> <p>CMOS MAC, Baseband PHY, and RF in a single chip for IEEE 802.11a/b/g/n compatible WLAN</p> <p>Complete 802.11n MIMO solution for 2.4GHz and 5GHz band</p> <p>2x2 MIMO technology for extended reception robustness and exceptional throughput</p> <p>Maximum PHY data rate up to 144.4 Mbps using 20MHz bandwidth, 300Mbps using 40MHz bandwidth</p> <p>Complies with 802.11n specification</p> <p>Backward compatible with 802.11a/b/g devices while operating at 802.11n data rates</p> <p>Host Interface</p> <p>Complies with USB 2.0</p> <p>Standards Supported</p> <p>IEEE 802.11a/b/g/n compatible WLAN</p> <p>IEEE 802.11e QoS Enhancement (WMM)</p> <p>IEEE 802.11i (WPA, WPA2). Open, shared key, and pair-wise key authentication services</p> <p>IEEE 802.11h TPC, Spectrum Measurement</p> <p>IEEE 802.11k Radio Resource Measurement</p> <p>WAPI (Wireless Authentication Privacy)</p> | <p>MAC Features</p> <p>Frame aggregation for increased MAC efficiency (A-MSDU, A-MPDU)</p> <p>Low latency immediate</p> <p>High-Throughput</p> <p>Block Acknowledgement (HT-BA)</p> <p>Long NAV for media reservation with CF-End for NAV release</p> <p>PHY-level spoofing to enhance legacy compatibility</p> <p>MIMO power saving mechanism</p> <p>Channel management and co-existence</p> <p>Multiple BSSID feature allows the RTL8192DU-VC to assume multiple MAC identities when used as a wireless bridge</p> <p>Supports Wake-On-WLAN via Magic Packet and Wake-up frame</p> <p>Transmit Opportunity (TXOP) Short Inter-Frame Space (SIFS) bursting for higher multimedia bandwidth</p> <p>Dual MAC architecture allows dual band or dual network access, or operation as a station and an AP concurrently</p> <p>WiFi Direct supports wireless peer to peer applications</p> <p>Peripheral Interfaces</p> <p>General Purpose Input/Output (12 pins)</p> <p>Three configurable LED pins</p> <p>Configurable Bluetooth Coexistence Interface</p> <p>Maximum data rate 54Mbps in 802.11a/g and 300Mbps in 802.11n</p> <p>OFDM receive diversity with MRC using up</p> |
|--|--|

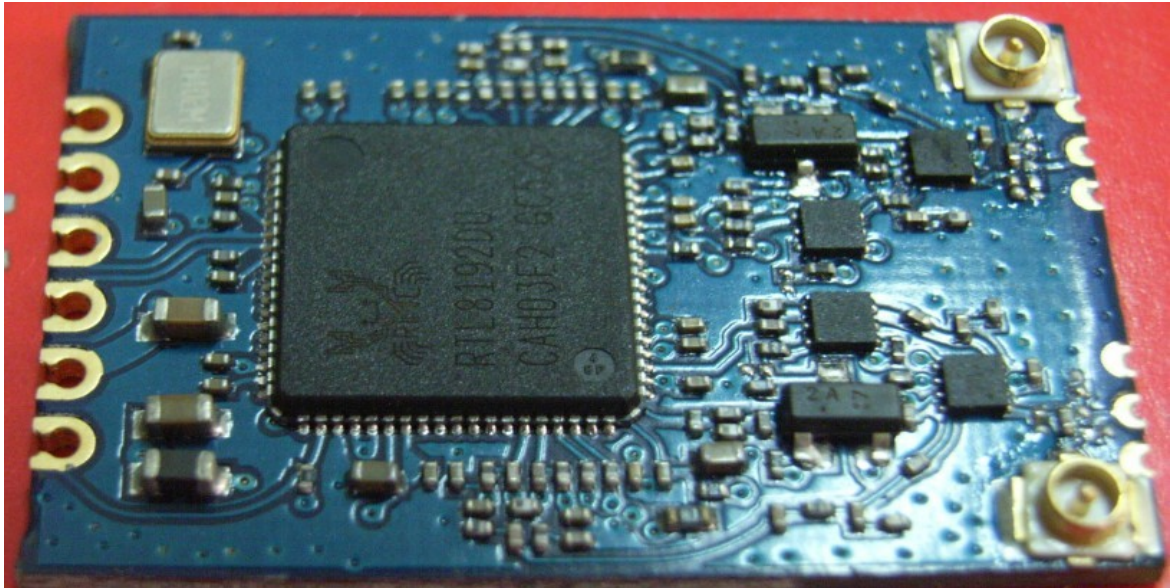
| | |
|---|--|
| <p>Infrastructure) certified.</p> <p>PHY Features</p> <p>IEEE 802.11n MIMO OFDM</p> <p>Two Transmit and Two Receive paths (2T2R)</p> <p>20MHz and 40MHz bandwidth transmission</p> <p>Supports 2.4GHz and 5GHz band channels</p> <p>Short Guard Interval (400ns)</p> <p>DSSS with DBPSK and DQPSK, CCK modulation with long and short preamble</p> <p>OFDM with BPSK, QPSK, 16QAM, and 64QAM modulation.</p> <p>Convolutional Coding Rate: 1/2, 2/3, 3/4, and 5/6</p> | <p>to 2 receive paths. Switch diversity used for DSSS/CCK</p> <p>Hardware antenna diversity</p> <p>Selectable digital transmit and receiver FIR filters</p> <p>Programmable scaling in transmitter and receiver to trade quantization noise against increased probability of clipping</p> <p>Fast receiver Automatic Gain Control (AGC)</p> <p>On-chip ADC and DAC</p> <p>QFN76 9x9mm package</p> |
|---|--|

General Specification

| | |
|-----------------------|--|
| Model | NT-UM02SPV1.2 |
| Product Name | WLAN 11a/b/g/n USB module |
| Chipset | RTL8192DU (Realtek) |
| Standard | IEEE802.11n current draft、IEEE 802.11g、IEEE 802.11b、IEEE 802.11a、IEEE 802.3、IEEE 802.3u、IEEE 802.3x |
| 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 | BPSK, QPSK, CCK and OFDM (BPSK/QPSK/16-QAM/ 64-QAM) |
| Frequency Band | 2.4/5.8GHz |
| Spread Spectrum | IEEE 802.11a: ISM(Industrial Scientific Medical) IEEE 802.11b: DSSS (Direct Sequence Spread Spectrum) IEEE 802.11g/n:OFDM (Orthogonal Frequency Division Multiplexing) |
| RF Output Power | < 18dBm@11b,< 14dBm@11g ,< 13dBm@11n, < 12dBm@11a, |
| Operation Mode | Ad hoc, Infrastructure |
| Receiver Sensitivity | 11Mbps -86dBm@8%,135Mbps -73dBm@10%,300Mbps -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 Power consumption in the normal Internet is 312MA |
| Operating Temperature | -10 ~ 70°C ambient temperature |
| Storage Temperature | -10 ~ 70°C ambient temperature |
| Humidity | 5 to 90 % maximum (non-condensing) |
| Dimension | 26.9750 x 17.6840 x 1.9mm (LxWxH) +-0.2MM |

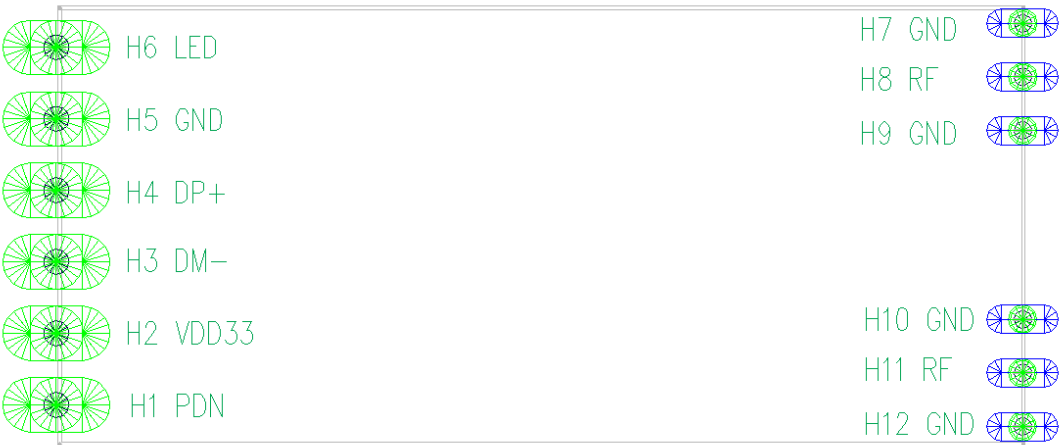
Mechanical

| Dimensions (mm) | Length | Width | Height |
|-----------------|-------------------------------|-------------------------------|---------------------------|
| | 26.9750 (Tolerance:±0.2mm) | 17.6840 (Tolerance:±0.2mm) | 1.9 (Tolerance:±0.2mm) |



MODULE PIN ASSIGNMENT

| Pin | Function | Pin | Function |
|-----|----------|-----|----------|
| H1 | PDN | H7 | GND |
| H2 | VDD33 | H8 | RF |
| H3 | DM- | H9 | GND |
| H4 | DP+ | H10 | GND |
| H5 | GND | H11 | RF |
| H6 | LED | H12 | GND |

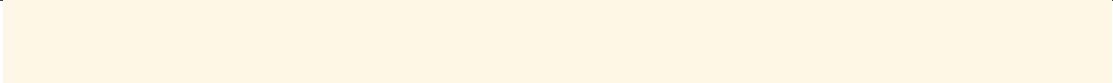


DC Characteristics

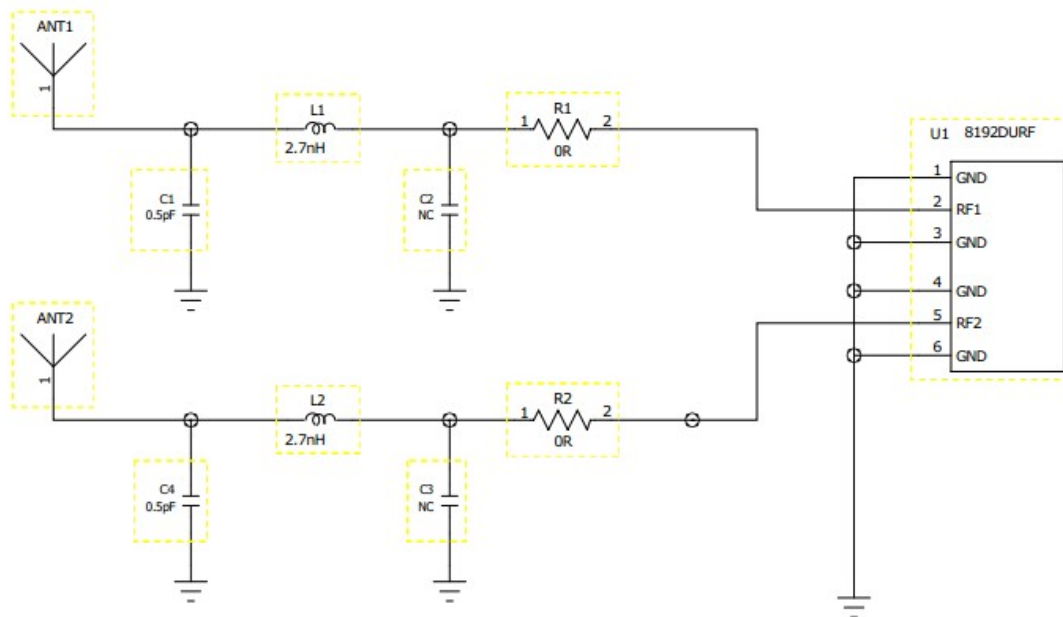
| Symbol | Parameter | Minimum | Typical | Maximum | Units |
|--------------|---------------------|---------|---------|---------|-------|
| VD15A, VD15D | 1.5V Supply Voltage | 1.4 | 1.5 | 1.6 | V |
| IDD33 | 3.3V Rating Current | - | - | 500 | mA |

Power Consumption

| Parameters | Sym | Conditions | Min | Typ | Max | Unit |
|--|--------------|------------|-----|-----|-----|------|
| V Supply Voltage | Vc3.3 | | 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 | Icc3.3 rx | H40MCS15 | | 189 | | MA |
| 3.3V Current Consumption | Icc3.3 rx | OFDM 54M | | 230 | | MA |
| Transmission Biggest transmission test | | | | | | |
| 3.3V Current Consumption | Icc3.3 tx | H40MCS15 | | 286 | | MA |
| 3.3V Current Consumption | Icc3.3 tx | OFDM 54M | | 312 | | MA |
| The depth waits for an opportunity | Icc3.3 tx/rx | | | 13 | | MA |
| Deep sleep | Ic3.3 tx/rx | | | 13 | | MA |

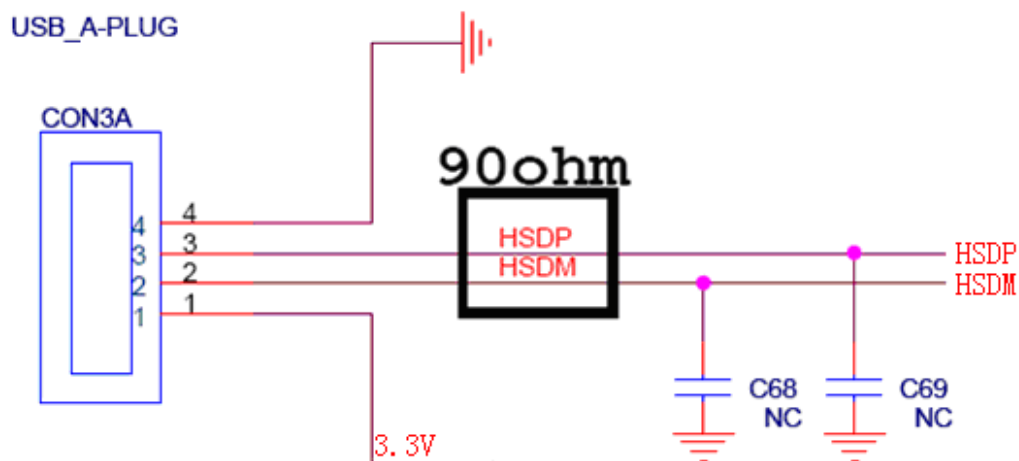


WIFI RF Circuit reference pictures



R1 R2:0R L1 L2:2.7nH C1 C4:0.5pF

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。