

# Circuit Description

## 1、 Basic Functions

The Ralink RT5370 is a Wireless LAN (WLAN) USB2.0 network interface controller compatible with the 802.11n specification. It combines a MAC, a 1T1R capable baseband, and RF in a single chip. The RT5370 provides a complete solution for a high throughput performance wireless client.

The RT5370 baseband implements Orthogonal Frequency Division Multiplexing (OFDM) with 1 transmit and 1 receive path and is compatible with the IEEE 802.11n specification. Features include one spatial stream transmission, short guard interval (GI) of 400ns, spatial spreading, and transmission over 20MHz and 40MHz bandwidth.

For legacy compatibility, Direct Sequence Spread Spectrum (DSSS), Complementary Code Keying (CCK) and OFDM baseband processing are included to support all IEEE 802.11b and 802.11g data rates. Differential phase shift keying modulation schemes, data scrambling capability, are available, and CCK provides support for legacy data rates, with long or short preamble. The high-speed FFT/IFFT paths, combined with BPSK, QPSK, 16QAM, and 64QAM modulation of the individual subcarriers and rate compatible punctured convolutiona of 1/2, 2/3, 3/4, and 5/6, provide higher data rates of 54Mbps and 150Mbps for IEEE 802.11g and 802.11n OFDM respectively.

The RT5370 supports fast receiver Automatic Gain Control (AGC) with synchronous and asynchronous control loops among antennas, antenna diversity functions, and adaptive transmit power control function to obtain the better performance in the analog portions of the transceiver.

## 2、 Product features

**Processor:** RT5370

**Antenna :** PCB Antenna

**Input voltage:** Input voltage 5V or 3.3V

**Operating Systems:** Windows XP 32/64, 2000, Windows 7,Vista 32/64 , Linux, Macintosh

### 3、Circuit Description

#### 1) Power supply

Outside input 5 V or 3.3 V , Power is converted to 3.3 or 1.2 Voltage through the DC-DC\LDO, the power supply to the machine; the 1.2V can also output by inside power supply

#### 2) Minimal System

RT5370 is CPU+ PA , Control the work of the various parts of machine and to amplify Wireless signal output

#### 3) Interface

The interface is normal USB signal ,it through connect computer then With the computer communications

#### 4) Antenna

Processor amplify Wireless signal through the antennaTransmit and to receive wireless AP signal

#### 5) Crystal oscillator

The crystal oscillator to provide 40MHZ basic frequency signal to processor

Antenna: on board antenna with gain 0dBi.

Frequency Range: 2.4~2.4835GHZ

Input Voltage: 5V powered by computer or 5V/3.3V powered by other Terminal equipment

### Radio Frequency

Receiving reading device out of radio frequency signal,

With induction current gain energy to send out the information stored in the chip. or Active send a signal The other end of the reading device read information and the decoding, Sent to the central information system on data processing.

Modulation mode :

CCK, DQPSK, DBPSK for DSSS

BPSK, QPSK, 16QAM and 64QAM for OFDM

Data rate :

11b: 1/2/5.5/11Mbps

11g: 6/9/12/24/36/48/54Mbps

11n HT-20: 72/65/57.8/43.3/28.9/21.7/14.4/7.2Mbps

11n HT-40: 150/135/120/90/60/54/45/30/15Mbps

Operating Frequency:  
802.11b/g/n-HT20: 2412MHz - 2462MHz  
802.11n-HT40: 2422MHz – 2452MHz

Number of Channels:  
802.11b/g/n-HT20: 11 channels  
802.11n-HT40: 7 channels