RA－WN11087A

IEEE 802.11b/g/n USB Wireless Module

Datasheet

Version A1

Document Release	Date	Modification	Initials	Approved
Version A1	2012/03/08	1. First version	Allan	

1. Introduction

Product Description

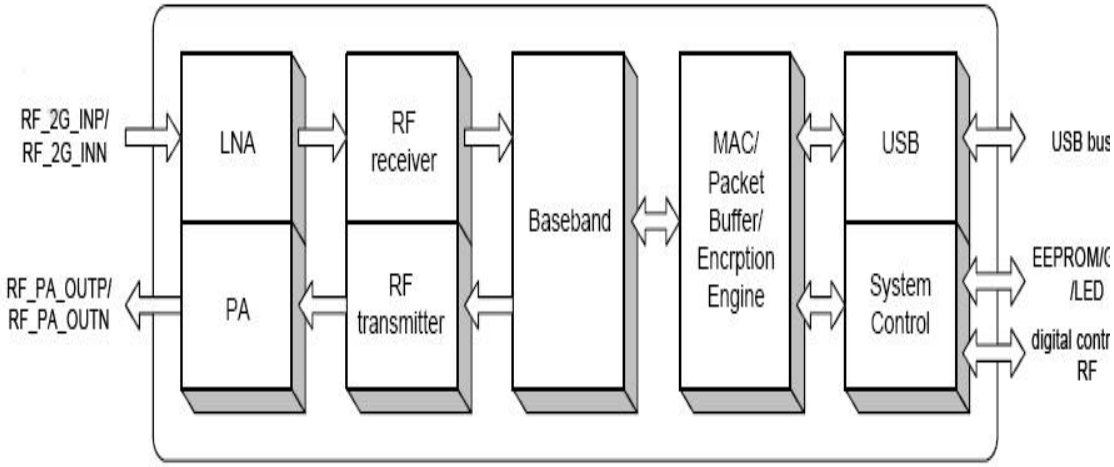
The RA-WN11087A is a highly integrated MAC/BBP and 2.4 GHz RF/PA/LNA single chip with 150Mbps PHY rate supporting. It fully complies with IEEE 802.11n and IEEE 802.11 b/g feature rich wireless connectivity at high standards, delivers reliable, cost-effective, throughput from an extended distance. Optimized RF architecture and baseband algorithms provide superb performance and low power consumption. Intelligent MAC design deploys a high efficient DMA engine and hardware data processing accelerators without overloading the host processor. The RA-WN11087A 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 PA, LNA, 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, WAPI *QoS-WMM, WMM-PS
*WPS,PIN,PBC
*Multiple BSSID Support
*USB 2.0
*Cisco CCX Support

*Low Power with Advanced Power Management
*Operating Systems - Windows XP 32/64, 2000, Windows 7,Vista 32/64 , Linux, Macintosh

2. simplified block diagram of the RA-WN11087A module is depicted in the figure below.



3. General Specifications

Model Name	**RA-WN11087A**
Product Description	**USB 2.0 Wireless Module**
WLAN Standard	**IEEE 802.11 b/g/n ,Wi-Fi compliant**
Host Interface	**USB 2.0**
Major Chipset	**Ralink RTL8188CTV**
Dimension	**12mm X 25mm X 1.0mm**
Weight	**5g**
Operating Conditions	
Voltage	
Operating Temperature	**-10~50℃**
Humidity Non-Operating	**90% RH non-condensing (12 months among 0~40℃)**
Electrical Specfications	
Frequency Range	**2.412~2.462GHZ**
Spread Spectrum	**DSSS**
Transmission Distance	**300m(The transmission speed may vary according to the environment)**
Data Rate	11n:150/135/120/90/60//54/45/30/15Mbps 72/65/57.8/43.3/28.9/21.7/14.4/7.2Mbps 11b:1/2/5.5/11Mbps 11g:6/9/12/24/36/48/54Mbps
	11b:1/2/5.5/11Mbps
	11g:6/9/12/24/36/48/54Mbps
Transmit power	**14.12dbm**
Data security	**64/128/152bitWEP,WPA/WPA2,WPA-PSK/WPA2-PSK(TKIP/AES)**
Receiver Sensitivity	**150M:-71dbm@10%PER**
	135M: -71dbm@10%PER

	54M:-71dbm@10%PER
	11M:-84dbm@10%PER
	6M:-89dbm@10%PER
	1M:-93dbm@10%PER
Environment	Storage Temperature:-40~70℃(-40℉ ~158℉)
	Relative humidity:10%-90%
	Non-condensing
	Storage Humidity:5%~95%
	Non-condensing
Modulation Type	OFDM
Operating System	Window98,ME,SE,XP,XP-64 Windows7，32/64, 2000,Vista,linux,mac

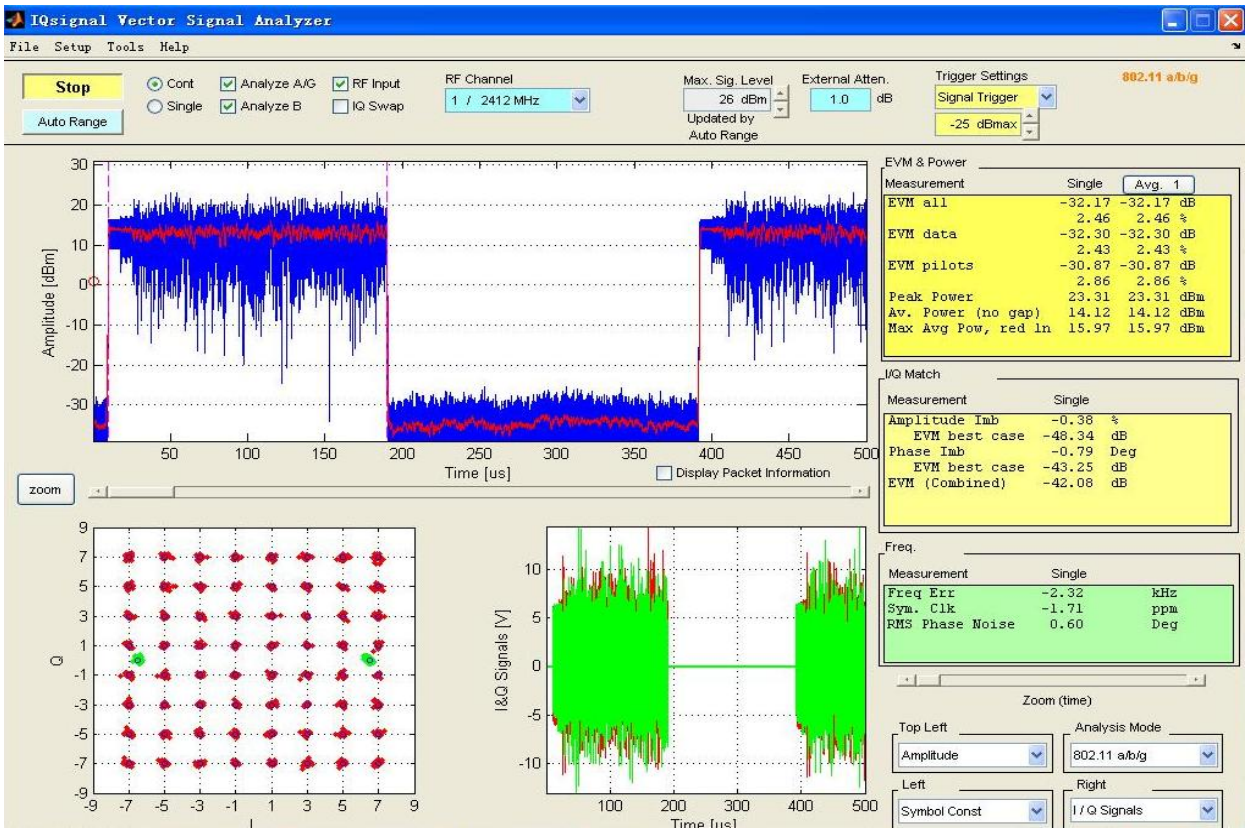
. Power Consumption

Parameters	Sym	Conditions	Min	Typ	Max	Unit
3.3V Supply Voltage	Vcc33		3.0	3.3	3.6	V
1.2V Supply Voltage	Vcc12		1.14	1.2	1.38	V
Receiving						
3.3V Current Consumption	Icc33rx	HT40 MCS7		35		mA
1.2V Current Consumption	Icc12rx	HT40 MCS7		190		mA
Transmission						
3.3V Current Consumption	Icc33tx	HT40 MCS7		230		mA
1.2V Current Consumption	Icc12tx	HT40 MCS7		110		mA

. Pin Description

J1	VCC	J5	LED
J2	UDM		
J3	UDP		
J4	GND		

. TEST PARAMETER



Test item	TX POWER	EVM	Freq ERR	RX SENS
Test result (54M)	14.12 dbm	-32.17dbm	-2.32 khz	-70 dbm

. Antenna And Interface Connection Information

Interface and the antenna have the option

. Product ordering information

RA－WN11081A CHIPSET, only support 802.11b/g/n, 5V voltage support
RA－WN11081A CHIPSET, only support 802.11b/g/n, 5V voltage support
And pls mark clearly your need about usb connection information.

. How the host system do the labeling

The Host system using this radio module , should have label indicated “contains FCC ID: AQF-RA-WN11087A”

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

FCC warning:

> This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generate, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-- Reorient or relocate the receiving antenna.
-- Increase the separation between the equipment and receiver.
-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-- Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body; And, when the module mix into finished product should meet the requirement: installed and operated with minimum distance 20cm between the radiator & your body.