

AW-NE762

IEEE 802.11b/g/n

PCIE full size Mini-Card Wireless Module

Datasheet

Version draft 0.8

Document release	Date	Modification	initials	Approved
Version 0.1	2008 /10 /28	Initial release	Amos	Eric Lee
Version 0.2	2008 / 11/18	1. power consumption 2. pin 20 change to input 3. update Dimension	Amos	Eric Lee
Version 0.3	2008/12/4	Add only 3.3V the power consumption	Amos	Antonio
Version 0.4	2009/01/13	Remove mino words	Stephanie	Ray Lee
Version 0.5	2009/01/13	Update 802.11n draft and Block Diagram	Amos	Antonio
Version 0.6	2009/05/25	Update PID/VID	Stephanie	Ray
Version 0.7	2009/07/20	Update pin 24	Amos	Antonio
Version 0.8	2009/ 07 / 22	Update Mechanical with Bracket	Steve	Ray

1. Introduction

AzureWave Technologies, Inc. introduces the pioneer of the IEEE 802.11b/g/n PCIE Full size Mini-Card wireless module ---AW-NE762. The AW-NE762 PCIE Full size Mini-Card wireless module is a highly integrated wireless local area network (WLAN) solution to let users enjoy the digital content through the latest wireless technology without using the extra cables and cords. It enables a high performance, cost effective, low power, compact solution that easily fits onto one side of a PCIE Full size Mini-Card.

Compliant with the IEEE 802.11b/g/n standard, the AW-NE762 uses Direct Sequence Spread Spectrum (DSSS), Orthogonal Frequency Division Multiplexing (OFDM), BPSK, QPSK, CCK and QAM baseband modulation technologies.

A high level of integration and full implementation of the power management functions specified in the IEEE 802.11 standard minimize system power requirements by using AW-NE762.

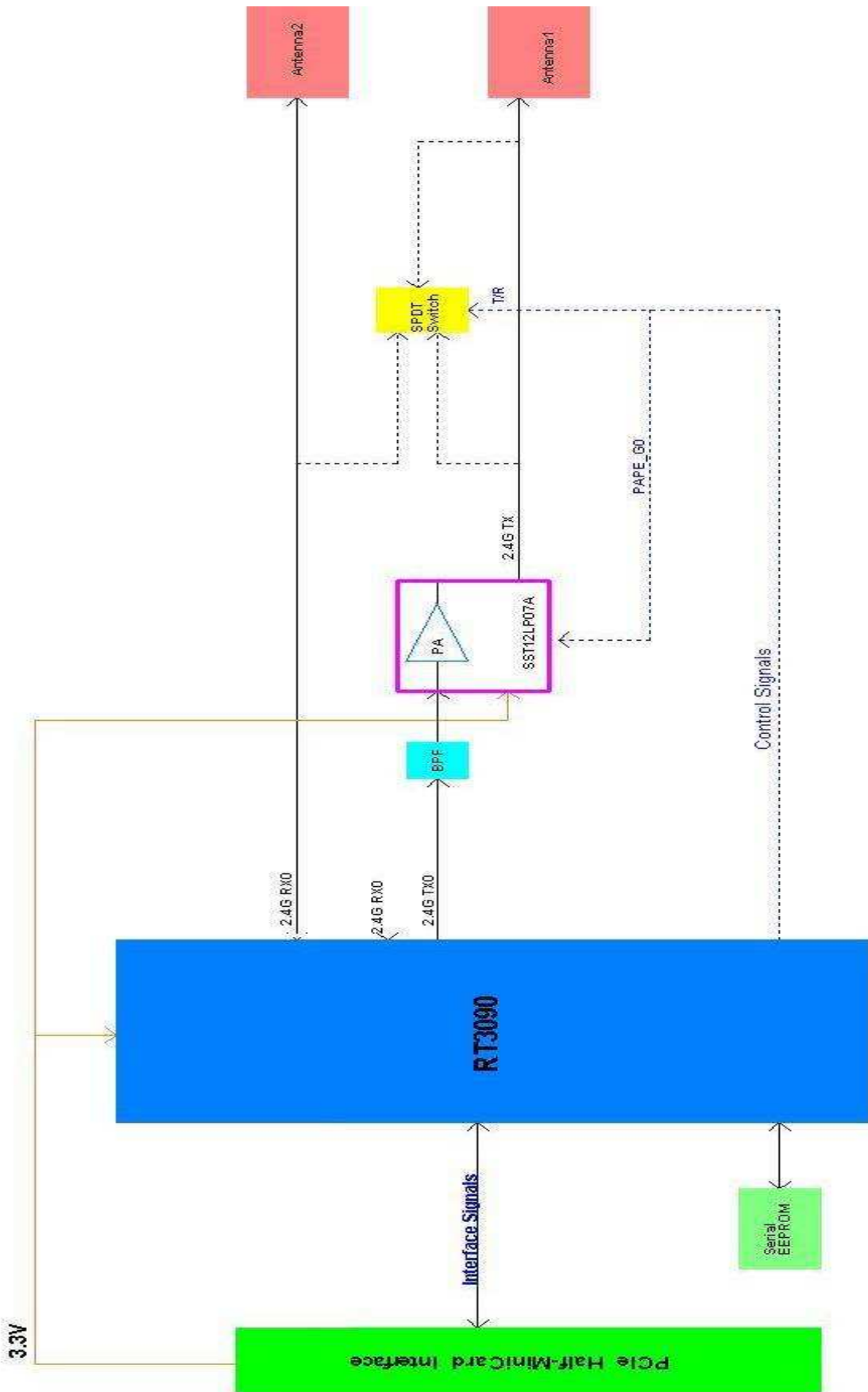
Longer Range and Faster Speed

Comparing to 802.11g technology, 802.11n draft 6.0 standard make big improvement on speed and range. It Increases wireless range by up to 2 times and reduces dead spots in coverage area. The robust signal travels farther, maintaining wireless connections more farther than standard 802.11g. The data rate can up to 150Mbps data rate.

2. Features

- ✦ **PCIE Full size Mini-Card**
- ✦ **Compliant with IEEE802.11n Draft 6.0 standard**
- ✦ **Antenna to support 1(Transmit) × 1 (Receive) technology**
- ✦ **High speed wireless connection up to 150Mbps**
- ✦ **Low power consumption and high performance**
- ✦ **Enhanced wireless security**

3. Block Diagram



4. General Specifications

Model Name	AW-NE762
Product Description	PCIE Full size Mini-Card wireless module
WLAN Standard	IEEE 802.11 b/g/n, Wi-Fi compliant
Host Interface	PCIE Full size Mini-Card
Major Chipset	Ralink RT3090 (MAC/Baseband/RF) Single chip
Product ID (Azurewave)	1087
Vendor ID (Azurewave)	1A3B
Dimension	29.85x 50.8 x3.25 mm
Weight	5.2 g
Antenna Connector	Hirose U.FL-R-SMT ANT1:TX ANT2:RX
Operating Conditions	
Voltage	+3.3V +/- 10%
Temperature	Operating: 0~80 °C Storage: -10~85 °C
Electrical Specifications	
Frequency Range	2.4 GHz ISM Bands 2.412-2.472 GHz, 2.484 GHz
Modulation	802.11 g/n: OFDM 802.11b: CCK(11, 5.5Mbps), QPSK(2Mbps), BPSK(1Mbps)
Output Power	802.11b: Typical 17 dBm at all data rates +/- 1.5 dBm 802.11g: Typical 15 dBm at all data rates +/- 1.5 dBm 802.11n: Typical (HT20) 15 dBm at all data rates +/- 1.5 dBm 802.11n: Typical (HT40) 15 dBm at all data rates +/- 1.5 dBm
Receive Sensitivity	802.11b: less than -80 dBm (11Mbps) 802.11g: less than -70 dBm (54Mbps) 802.11n: less than -61 dBm at HT40 MCS7 less than -64 dBm at HT20 MCS7
Data Rates	802.11b: 11,5.5,2,1 Mbps 802.11g: 54,48,36,24,18,12,9,6 Mbps 802.11n: up to 150Mbps
Operating Range	Open Space: ~300M Indoor:~100M (The transmission speed may vary according to the environment)
Security	◆ WEP 64-bit and 128-bit encryption ◆ WPA(Wi-Fi Protected Access) ◆ WPA2(Wi-Fi Protected Access)

Operating System Compatibility

Windows XP/Vista

Regulatory

FCC / CE / NCC / Japan ...etc

Details refer to Regulatory documentation

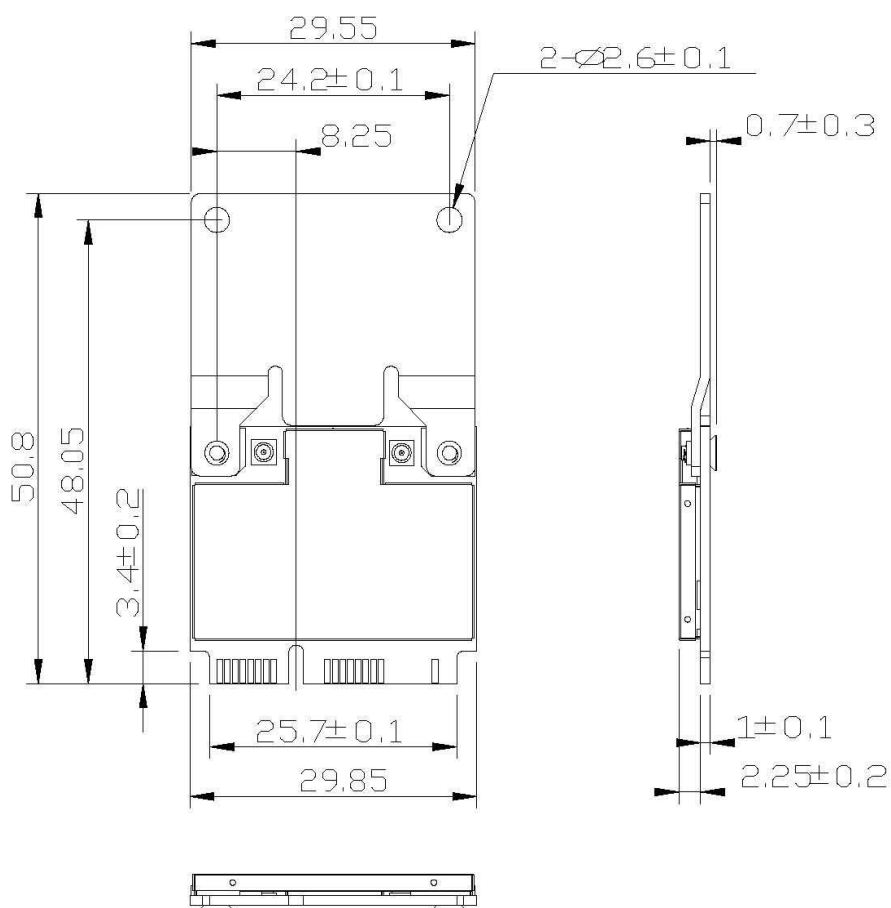
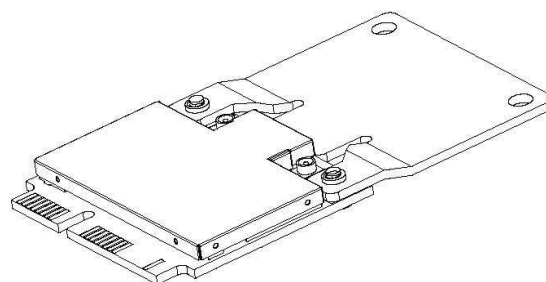
4-1. Power Consumption

Test PC		Test Bed IBM-R52 BIOS Phoenix (10/20/05) CPU Mobile Intel Pentium M 750 , 1866 Mhz (14x133) RAM 1024 MB (DDR2 SDRAM)			
Driver Version		11/28/2008 1.3.0.0			
Power save mode		Max		No	
Voltage		3.3V	Total	3.3V	Total
Non-Associated		66mA	217mW	66mA	217 mW
Associated		226~66mA	745~217 mW	225mA	742.5 mW
Radio Off		76mA	250.8 mW	76mA	250.8 mW
Disable Device		40mA	132 mW	40mA	132 mW
Driver Version		ATE 0.0.1.1			
Voltage		3.3V		Total	
TX	11b(11M)	312mA		1029 mW	
	11g(54M)	266mA		877.8 mW	
	11n@HT20(65M)	263mA		867.9 mW	
	11n@HT40(130M)	254mA		838.2 mW	
RX	11b(11M)	264mA		871.2 mW	
	11g(54M)	238mA		785.4 mW	
	11n@HT20(65M)	234mA		772.2 mW	
	11n@HT40(130M)	252mA		831.6 mW	

4-2. Absolute Maximum Ratings

Symbol	Parameter	Max. Rating	Unit
V _{dd33}	Maximum I/O supply voltage	+3.6	V
RF _{in}	Maximum RF input (reference to 50 Ω)	-20	dBm
T _{store}	Storage temperature	-10~85	℃

5. Mechanical Dimensions



Tolerances unless otherwise specified : $\pm 0.15\text{mm}$

6. Connector Pin-out Definitions

Pin No.	Definition	Basic Description	Type
1	NC	No connect. Should be left open.	
2	3.3v	3.3V power supply	VCC
3	NC	No connect. Should be left open	
4	GND	Ground	GND
5	NC	No connect. Should be left open	
6	NC	No connect. Should be left open.	
7	CLKREQ_L	Reference clock request.	
8	NC	No connect. Should be left open.	
9	GND	Ground	GND
10	NC	No connect. Should be left open.	
11	REFCLK-	Differential reference clock	
12	NC	No connect. Should be left open.	
13	REFCLK+	Differential reference clock	
14	NC	No connect. Should be left open.	
15	GND	Ground	GND
16	NC	No connect. Should be left open.	
17	NC	No connect. Should be left open.	
18	GND	Ground	GND
19	NC	No connect. Should be left open.	
20	W_DISABLE_L	WLAN disable control.	input
21	GND	Ground	GND
22	PERST_L	PCI express fundamental reset	Input
23	PERn0	Differential transmit	Output
24	NC	No connect. Should be left open.	
25	PERp0	Differential transmit	Output
26	GND	Ground	GND
27	GND	Ground	GND
28	NC	No connect. Should be left open.	
29	GND	Ground	GND
30	NC	No connect. Should be left open.	
31	PETn0	Differential receive	Input
32	NC	No connect. Should be left open.	
33	PETp0	Differential receive	Input
34	GND	Ground	GND
35	GND	Ground	GND
36	NC	No connect. Should be left open.	
37	NC	No connect. Should be left open.	
38	NC	No connect. Should be left open.	
39	NC	No connect. Should be left open.	
40	GND	Ground	GND
41	NC	No connect. Should be left open.	
42	NC	No connect. Should be left open.	
43	NC	No connect. Should be left open.	
44	LED_WLAN_L	Active low signal. The signal is used to provide status indicators via LED.	Output
45	NC	No connect. Should be left open.	
46	NC	No connect. Should be left open.	
47	NC	No connect. Should be left open.	
48	NC	No connect. Should be left open.	
49	NC	No connect. Should be left open.	
50	GND	Ground	GND
51	NC	No connect. Should be left open.	
52	3.3v	3.3V power supply	VCC