

PRODUCT SPECIFICATION

802.11b/g, 54Mbps Wireless LAN miniPCI card

WN2302A

Version 1.8

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Change History:

Revision	Date	Author	Change List
Version 1.0	2004/08/05	Brian Liu	Preliminary
Version 1.1	2004/12/13	Brian Liu	Wording modified
Version 1.2	2005/03/11	Brian Liu	Wording modified
Version 1.3	2005/05/20	Brian Liu	Wording modified
Version 1.4	2005/07/21	Brian Liu	Wording modified
Version 1.5	2005/07/25	Brian Liu	Rohs compliance added
Version 1.6	2005/12/29	Brian Liu	Country/Domain information added
Version 1.7	2006/04/19	Brian Liu	Transmit power tolerance added
Version 1.8	2006/04/24	Brian Liu	Radio on/off miniPCI pin definition added

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(Please Sign Back by FAX. For Confirming the Spec Only, not an Official Agreement for OEM/ODM Business)

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PRODUCT DESCRIPTION

The WN2302A is a Wireless LAN miniPCI card designed for notebook/laptop. It works under 2.4GHz bandwidth with max data transfer rate of 54Mbps. WN2302A is compatible with IEEE 802.11 standards, i.e. 802.11b, and 802.11g. It provides full functional wireless access within wireless environments anytime, anywhere at a data rate up to 54Mbps.

The WN2302A is developed using advanced chipsets designed by Atheros Communications. To ensure that user's privacy is well protected, the WN2302A is developed to feature enterprise-class security, i.e. 40-bit, 128-bit, 152-bit Wired Equivalent Privacy (WEP) encryptions, Temporal Key Intergrity Protocol (TKIP) and Advanced Encryption Standard (AES) encryptions. A new security feature, WPA (WiFi Protected Access), is also supported. The WPA includes the 802.11x, a centralized, server-based authentication.

We choose Atheros AR2413 which is an all CMOS, single chip solution to develop IEEE802.11b/g wireless miniPCI card. It enables a high performance, low power consumption with competitive cost.

WN2302A also supports Cisco Compatible Extensions (CCX) by using Atheros standard application utility. This feature allows compatibility with Cisco Aironet wireless infrastructure products.

PRODUCT FEATURES

- Operate at ISM frequency bands (2.4GHz) with 54Mbps data rate
- IEEE standards support: IEEE 802.11b, 802.11g
- Enterprise level security which can apply WPA2 certification
- Superior range and throughput
- Full-featured software utility for easy configuration and management
- Power savings features and low power consumptions for mobile powered applications
- Single chip – CMOS solution which allows high performance with competitive cost.
- Rohs compliance

Product specifications

Main chipset

Baseband / MAC / RF: Atheros AR2413

Power Amplifier: GPLUS GP1214

Functional Specifications

Standard	IEEE802.11b; IEEE 802.11g; IEEE 802.11i
Bus Interface	MiniPCI Card, TypeIIIB
Data Rate	802.11g compliant: 11, 5.5, 2, 1 (DSSS/CCK); 6, 9, 12, 18, 24, 36, 48, 54 (OFDM) Mbps data rates

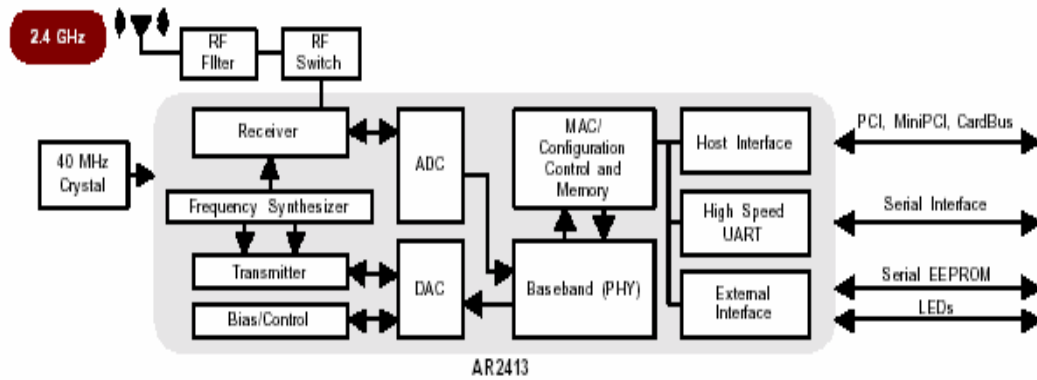
Media Access Control	CSMA/CA with ACK	
Radio Technology	802.11g : DSSS/CCK, OFDM (Orthogonal Frequency Division Multiplexing)	
Modulation Techniques	Orthogonal Frequency Division Multiplexing (OFDM) / Complementary Code Keying (CCK)	
Network architecture	Ad-hoc mode (Peer-to-Peer) Infrastructure mode	
Operating Channel	802.11b & g 11: (Ch. 1-11) – N. America	
Frequency Range	802.11 b & g 2.412 ~ 2.462 GHz – N. America	
Transmit Output Power (Tolerance: +1dBm, -1dBm)	802.11b 17 dBm	802.11 g 17 dBm (6, 9, 12, 18, 24 Mbps) 17 dBm (36 Mbps) 15 dBm (48, 54 Mbps)
Receiver Sensitivity	802.11b 11 Mbps: -83 dBm 5.5 Mbps: -86 dBm 2 Mbps: -87 dBm 1 Mbps: -89 dBm	802.11 g 54 Mbps: -70 dBm 48 Mbps: -71 dBm 36 Mbps: -75 dBm 24 Mbps: -79 dBm 18 Mbps: -82 dBm 12 Mbps: -84 dBm 9 Mbps: -87 dBm 6 Mbps: -87 dBm
Security	64-bit, 128-bit and 152-bit WEP, AES, TKIP, WPA2	
Operating Voltage	3.3 V \pm 5% I/O supply voltage	
OS supported	Windows 98SE/ME/2000/XP	
Power Consumption	802.11b Rx: 260-270mA Tx: 340-350mA Sleep: 35mA	802.11g Rx: 280-290mA Tx: 350-360mA Sleep: 35mA
Antenna Type	Dual antenna connector	
Radio ON/OFF Switch	Enabled, high signal enable radio, low signal disable radio, pin 13 on miniPCI interface	

Mechanical

Dimensions (L x W x H): 2.35 x 1.79 x 0.18 in (59.8 x 45.5 x 4.5 mm)

Weight: 0.46 oz (13 g)

Block Diagram



EEPROM COUNTRY/REGULATORY INFORMATION

EEPROM Hex: 0x0000 (Atheros Default Value – North America (FCC) setting)

ENVIRONMENTAL

Operating

Operating Temperature: 0 to 55 °C (32 to 131 °F)

Relative Humidity: 5-90% (non-condensing)

Storage

Temperature: -20 to 70 °C (-4 to 158 °F)

Relevant Humidity: 5-95% (non-condensing)

Federal Communication Commission Interference Statement

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 generates, 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 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 Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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 device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

IMPORTANT NOTE:

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.

This device is intended only for OEM integrators under the following conditions:

OEM integrator is still responsible for testing their end product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

IMPORTANT NOTE: In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

The host integrate this module is limited to those with 3.3VDC regulator for providing this module stable power source.

Modular OEM Integrator Notice

End Product Labeling

The final end product must be labeled in a visible area with the following: "Contains TX FCC ID: **SQ3APR6200801**".