

FCC Statement

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

The 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.

The user's manual or instruction manual for an intentional or unintentional radiator shall caution the user that 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 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 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 needed.

Consult the dealer or an experienced radio/TV technician for help.



CAUTION:

To comply with FCC RF exposure compliance requirements, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons.

This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter

If this device is going to be operated in 5.15 ~ 5.25GHz frequency range, then it is restricted in indoor environment only.

IMPORTANT NOTE:

This module is intended for OEM integrator. The OEM integrator is still responsible for the FCC compliance requirement of the end product which integrates this module.

20cm minimum distance has to be able to be maintained between the antenna and the users for the host this module is integrated into. Under such configuration, the FCC radiation exposure limits set forth for a population/uncontrolled environment can be satisfied.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

USERS MANUAL OF THE END PRODUCT:

In the users manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied. The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment. If the size of the end product is smaller than 8x10cm, then additional FCC part 15.19 statement is required to be available in the users manual:

This device complies with Part 15 of 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.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following" Contains TX FCC ID: UOH-AG623T".

If the size of the end product is larger than 8x10cm, then the following FCC part 15.19 statement has to also be available on the label: This device complies with Part 15 of 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.

RF Exposure Manual Information That Must be Included

The users manual for end users must include the following information in a prominent location "IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter."

Additional Information That Must be Provided to OEM Integrators

The end user should NOT be provided any instructions on how to remove or install the device.

1. Introduction

54Mbps IEEE802.11a/b/g Wireless Network Mini PCI Adapter is the perfect solution for your wireless network applications based on the IEEE 802.11a/b/g standard offering a data rate of 54Mbps in a wireless LAN environment.

AG-623 is designed for Access Point, Router, ATUR, Printer Server series, IP Camera series and Internet Video Server gives you wireless access the web and network resource without the wire.

AG-623 provides high-speed access to network resources and has built-in 40/64-bit, 128 bit and 256 bit of WEP (Wired Equivalent Privacy) data encryption. With Direct Spread Spectrum Signaling (DSSS) and Orthogonal Frequency Division Multiplexing (OFDM), domain access control, WEP encryption and group security, the modules will safeguard all your wireless data transmissions from your nosy neighbors.

AG-623 allows you to take full advantage of your devices mobility with access to real-time information and online services anytime and anywhere.

2. Feature

- . Complies with IEEE 802.11a/b/g Standard for Wireless LAN.
- . Works with All Existing Network Infrastructures.
- . Compatible with Wi-Fi Wireless Products and Services
- . Capable of up to 256-Bit WEP Encryption.
- . Freedom to Roam While staying Connected
- . 54 Mbps High-Speed Transfer Rate
- . Two UF-L Connectors for External Antenna
- . Support Antenna diversity for Better Sensitivity
- . Lower Power Consumption.

3.Specification

Product Description				
IEEE 802.11a/b/g 5 & 2.4 GHz WLAN miniPCI card with Turbo A & Turbo G				
Lead Free				
RoHs Compliant				
Host Interface				
32-bit miniPCI				
Operating Voltage				
DC 3.3 + 5%				
Chipset				
Mac/BB Processor	Atheros AR5413 (Single chip)			
PA Chip	RF5824 RFMD			
Power Consumption				
11A	TX: \leq 550 mA		RX: \leq 450 mA	
11B	TX: \leq 550 mA		RX: \leq 450 mA	
11G	TX: \leq 550 mA		RX: \leq 450 mA	
Radio				
Antenna	two U.FL-R-SMT connectors			
Output Power1 (measure with 2dBi antenna) (average)	IEEE 802.11b	Minimum	Typical	Maximum
	11Mbps	14.5dBm	16dBm	17dBm
	1Mbps	14.5dBm	16dBm	17dBm
	Ch.1 & 11	12.5dBm	14dBm	15dBm
	IEEE 802.11g	Minimum	Typical	Maximum
	54Mbps	15.5dBm	17dBm	17dBm
	6Mbps	15.5dBm	17dBm	17dBm
	Ch.1 & 11	11.5dBm	13dBm	14dBm
	IEEE 802.11a	Minimum	Typical	Maximum
	54Mbps	10.5dBm	12dBm	13.5dBm
	6Mbps	12.5dBm	14dBm	15dBm
	5150~5250MHz	9.5dBm	11dBm	12dBm

Sensitivity	IEEE 802.11a / Super A Sensitivity @ Packet Error Rate: 10%	IEEE 802.11g / Super G Sensitivity @ Packet Error Rate: 10%	IEEE 802.11b Sensitivity @ Packet Error Rate: 8%
	<ul style="list-style-type: none"> ◆ 54 / 108 Mbps: \leq -65dBm ◆ 48 / 96 Mbps: \leq -66dBm ◆ 36 / 72 Mbps: \leq -70dBm ◆ 24 / 48 Mbps: \leq -74dBm ◆ 18 / 36 Mbps: \leq -77dBm ◆ 12 / 24 Mbps: \leq -79dBm ◆ 9 / 18 Mbps: \leq -81dBm ◆ 6 / 12 Mbps: \leq -82dBm 	<ul style="list-style-type: none"> ◆ 54 / 108 Mbps: \leq -65dBm ◆ 48 / 96 Mbps: \leq -66dBm ◆ 36 / 72 Mbps: \leq -70dBm ◆ 24 / 48 Mbps: \leq -74dBm ◆ 18 / 36 Mbps: \leq -77dBm ◆ 12 / 24 Mbps: \leq -79dBm ◆ 9 / 18 Mbps: \leq -81dBm ◆ 6 / 12 Mbps: \leq -82dBm 	<ul style="list-style-type: none"> ◆ 11Mbps: \leq -80dBm ◆ 5.5Mbps: \leq -83dBm ◆ 2Mbps: \leq -84dBm ◆ 1Mbps: \leq -87dBm
Modulation	IEEE 802.11a (OFDM/DSSS) <ul style="list-style-type: none"> ◆ 48/54 Mbps (QAM-64) ◆ 24/36 Mbps (QAM-16) ◆ 12/18 Mbps (QPSK) ◆ 6/9 Mbps (BPSK) 	IEEE 802.11g (OFDM/DSSS) <ul style="list-style-type: none"> ◆ 48/54 Mbps (QAM-64) ◆ 24/36 Mbps (QAM-16) ◆ 12/18 Mbps (QPSK) ◆ 6/9 Mbps (BPSK) 	IEEE 802.11b (DSSS) <ul style="list-style-type: none"> ◆ 5.5/11 Mbps (CCK) ◆ 2 Mbps (DQPSK) ◆ 1 Mbps (DBPSK)
Range Coverage (Typical range in open environment with 0 dBi Antenna)	IEEE 802.11a <ul style="list-style-type: none"> ◆ 54Mbps: \geq 60 meter 	IEEE 802.11g <ul style="list-style-type: none"> ◆ 54Mbps: \geq 60 meter 	IEEE 802.11b <ul style="list-style-type: none"> ◆ 11Mbps: \geq 80 meter
Operating Frequency	IEEE 802.11a ISM Band <ul style="list-style-type: none"> ◆ Japan(TELEC): 5.15GHz ~ 5.25GHz, 5.25~5.35GHz ◆ USA(FCC):5.15GHz ~ 5.25GHz, 5.725~5.850GHz 		
	IEEE 802.11b/g ISM Band <ul style="list-style-type: none"> ◆ Japan(TELEC): 2.412 GHz ~ 2.472 GHz (CH13 for 802.11g, CH14 for 802.11b) ◆ USA(FCC):2.412GHz ~ 2.462GHz(CH1~11) 		
Software Specification			
Supported OS	Identical to Atheros Latest Version		
Security	Identical to Atheros Latest Version		
Physical Specification			
Dimension	59.6mm(L) * 31.3mm(W) * 4mm(H)		
Weight	\leq 50 g		
Environment Specification			
Temperature			
Operating	0 ~ 65 °C		
Storage	-20 ~ 80 °C		
Warranty			
12 months			

4. Hardware Installation

The following sections in this chapter describe how to install AG-623 Module

4.1. Installation Overview

AG-623 wireless module is design for Access Point, Router, ATU-R, Printer Server series, IP Camera series and Internet Video Server only.

4.2. Safety Recommendations

The safety guidelines are as follows:

Keep the board area clear and dust-free before, during, and after installation.

Keep tools away from walk areas where you and others could fall over them.

Do not wear loose clothing or jewelry, such as earrings, bracelets, or chains, that could get caught in the board.

Wear safety glasses if you are working under any conditions that might be hazardous to your eyes.

Do not perform any action that creates a potential hazard to people or makes the equipment unsafe.

Never attempt to lift an object that is too heavy for one person to handle.

4.3. Maintaining Safety with Electricity

Warning: Before working on a board or working near power supplies, unplug the power cord on AC units; on DC units, disconnect the power at the circuit breaker.

Follow these guidelines when working on equipment powered by electricity:

Do not work alone if potentially hazardous conditions exist anywhere in your work space.

Never assume that power is disconnected from a circuit; always check the circuit.

extension cables, frayed power cords, and missing safety grounds.

If an electrical accident occurs, proceed as follows:

- Use caution; do not become a victim yourself.
- Disconnect power from the system.
- If possible, send another person to get medical aid. Otherwise, assess the condition of the victim and then call for help.
- Determine if the person needs rescue breathing or external cardiac compressions; then take appropriate action.

- 7 -

4.4. Installing a **AG-623**

Remove the **AG-623** module from its protective packaging.

Avoiding Electrostatic Discharge

Before you install the **AG-623** module, ground yourself by touching a piece of metal to avoid electrostatic discharge (ESD). You should also take the following precautions to prevent damage to the **AG-623** module:

Keep the **AG-623** module in its antistatic-shielded bag until you are ready to install it.

Handle the **AG-623** module by its edges.

Ensure the connector is connected to above Model's board tightly.