Alpha Networks Inc.

User Manual

For

WMP-N09H

無線網路卡

Wireless Mini PCI Adapter

Version: 1.1

2011/1/13

Contents

Test Operation Manual

Test Utility Installation:

1. Unzip "ART_V0_5_b25ALL.zip" to "C:\".
2. The utility must run on Win2000 or WinXP.

Hardware Installation:

Before insert the card, please execute the below instruction at first !!

1. **Win2000 OS :**

   Enter in the directory : C:\ v0_5_b25ALL\art_driver\bin\2000

   Execute the uninst_new_drv_2k.bat:

   Execute the inst_new_drv_2k.bat :

   WinXP OS :

   Enter in the directory : C:\ v0_5_b25ALL\art_driver\bin\xp

   Execute the uninst_new_drv_xp.bat:

   Execute the inst_new_drv_xp.bat

2. Insert the card, then install the driver , the driver is located at

   Win2000 OS :

   C:\ v0_5_b25ALL\art_driver\bin\2000

   WinXP OS :

   C:\ v0_5_b25ALL\art_driver\bin\xp

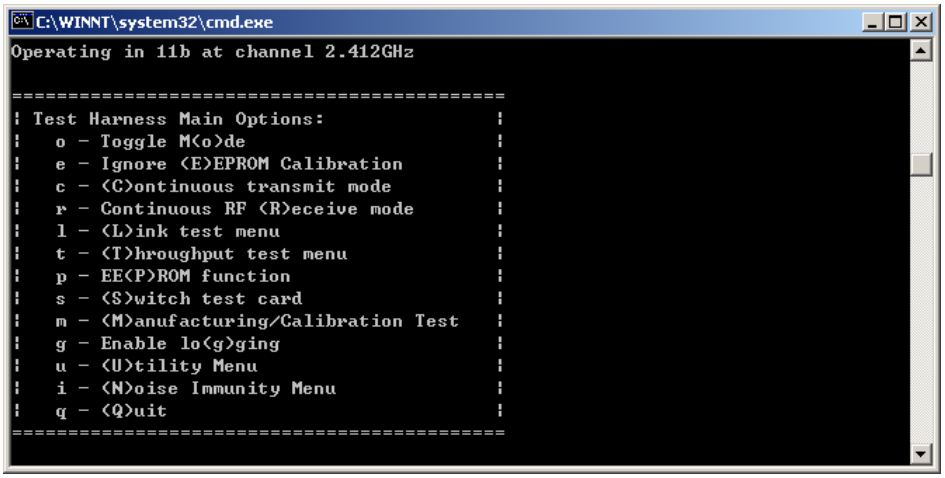
Configuration:

1. Enter the DOS command mode , then change the directory to :
   C:\ v0_5_b25ALL\art_driver\bin\xp
2. Input the instruction: art \id=2082

   Then press enter .

ART TEST MODE:

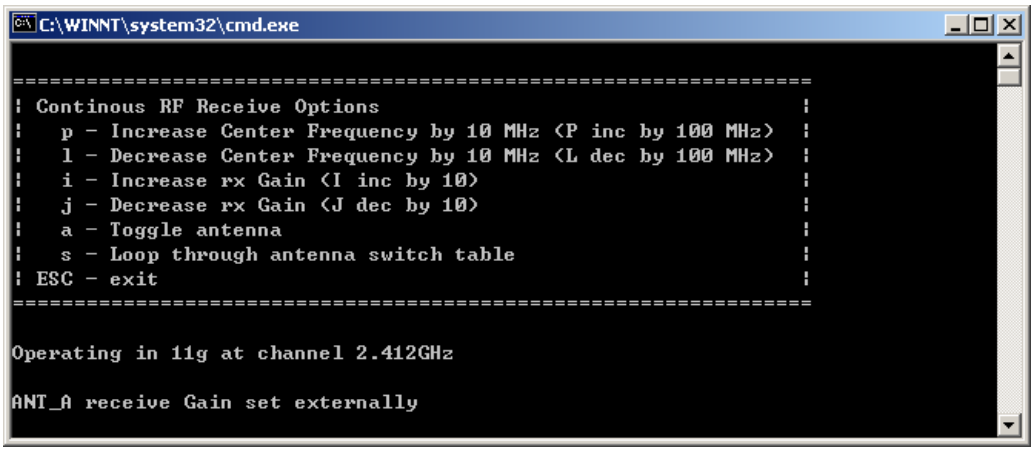
1. Once utility is executed, a menu with test options will appear. To run a test, press the character key that is assigned to the test option.
   For example, press “c” to run the continuous transmit test, or press “r ” to run the continuous receive test.
   For example: press “o” to change 11g or 11b test mode, Press “c” to continuous transmit mode .



2. Continuous Transmit Options.
   a. Before the Continuous Transmit test, need to press “e” first
      The command will load the calibrate data to the EEROM, then the card can transmit the target power
   b. The channel frequency, data rate and output power could be changed in continuous transmit options. Press “c” to increase the output power , 11g Power (data rate 6Mbps) is 17dBm, 11b Power is 17dBm , Press ESC to return to the main Test Options menu when finished.

3. Continuous Receive Options
   Continuous receive options will put the radio into receive mode to allow for radio measurements. Press ESC to return to the main Test Options menu when

finished.



1.0 Scope

1.1 Document

This document is to specify the product requirements for **802.11n Mini PCI**. This mPCI is based on Atheros chip that complied with IEEE 802.11n from 2.4~2.5GHz, and it is also backward compatible to comply with IEEE 802.11g and IEEE 802.11b standard to connect your exist 802.11 b/g wireless LAN device.

1.2 Product Features

- Compatible with IEEE 802.11g high rate standard to provide wireless 54Mbps data rate
- Compatible with IEEE 802.11b high rate standard to provide wireless 11Mbps data rate
- Compatible with IEEE 802.11n draft standard to provide wireless 300Mbps data rate
- Operation at 2.4 ~ 2.5GHz frequency band to meet worldwide regulations
- Dynamic date rate scaling at 6, 9, 12, 18, 24, 36, 48, 54Mbps for IEEE 802.11g
- Dynamic date rate scaling at 1, 2, 5.5, and 11Mbps for IEEE 802.11b
- Dynamic date rate of IEEE 802.11n scaling from MCS – 0 to MCS –15 as shown in Appendix I
- Supports WEP, 802.1x, WPA and WPA2 enhanced security
- Friendly user configuration and diagnostic utilities
- Support Linux driver.
- Supports Mini-PCI Type IIIA form factor

2.0 Requirements

The following sections identify the detailed requirements of the **802.11 b/g/n**

2.1 General Requirements

2.1.1 General Section

#	Feature	Detailed Description
2.1.1.1	Antenna Type	• Two UFL antenna connectorsS
2.1.1.2	Operating Voltage	• 3.3VDC +/- 10%
2.1.14	Form Factor and Interface	• Mini-PCI type III A form factor

2.2 Requirements of Reliability,

Maintainability and Quality

#	Feature	Detailed Description
2.2.1	MTBF	• Mean Time Between Failure > 30,000 hours
2.22	Maintainability	• There is no scheduled preventive maintenance required
2.2.3	Quality	• The product quality is followed-up by Alpha Networks factory quality control system

2.3 Environmental Requirements

#	Feature	Detailed Description
2.3.1	Operating Temperature Conditions	• The product is capable of continuous reliable operation when operating in ambient temperature of 0 ℃ to +40℃.
2.3.2	Non-Operating Temperature Conditions	• Neither subassemblies is damaged nor the operational performance is degraded when restored to the operating temperature after exposing to storage temperature in the range of –20 ℃ to +75 ℃.
2.3.3	Operating Humidity conditions	• The product is capable of continuous reliable operation when subjected to relative humidity in the range of 10% and 90% non-condensing.
2.34	Non-Operating Humidity Conditions	• The product is not damaged nor the performance is degraded after exposure to relative humidity ranging from 5% to 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.

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.

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.

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

IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.

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

1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and

2) The transmitter module may not be co-located with any other transmitter or antenna,

3) For all products market in US, OEM has to limit the operation channels in CH1 to CH11 for 2.4G band by supplied firmware programming tool. OEM shall not supply any tool or info to the end-user regarding to Regulatory Domain change.

As long as 3 conditions above are met, further transmitter test will not be required. However, the 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 can not 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 can not 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.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains FCC ID: RRKWMPN09HB1".

Manual Information To the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

Industry Canada Statement

This device complies with RSS-210 of the Industry Canada Rules. Operation is subject to the following two conditions:

1) this device may not cause interference and

2) this device must accept any interference, including interference that may cause undesired operation of the device

This device has been designed to operate with an antenna having a maximum gain of 3.1dBi (Peak Gain) Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the EIRP is not more than required for successful communication.

IMPORTANT NOTE:

IC Radiation Exposure Statement:

This equipment complies with IC 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 radio transmitter IC 4833A- WMPN09HB1 has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Approved antenna list: Impedance 50 ohm.

Manufacture	Model name	Gain (dBi)	Type	Connector
Grand-Tek	C1318-5100011-A (OA-24-04-13)	3.1dBi (Included cable loss)	Dipole	RP-N plug

This device is intended only for OEM integrators

under the following conditions:

The transmitter module may not be co-located with any other transmitter or antenna.

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

1. The antenna must be installed such that 20 cm is maintained between the antenna and users, and

2. The transmitter module may not be co-located with any other transmitter or antenna,

3. For all products market in CANADA, OEM has to limit the operation channels in CH1 to CH11 for 2.4G band by supplied firmware programming tool. OEM shall not supply any tool or info to the end-user regarding to Regulatory Domain change.

IMPORTANT NOTE: In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the IC authorization is no longer considered valid and the IC ID can not 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 IC authorization.

End Product Labeling

The final end product must be labeled in a visible area with the following: “Contains TX IC：4833A- WMPN09HB1”.

Manual Information To the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user’s manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Ce dispositif est conforme à la norme CNR-210 d'Industrie Canada applicable aux appareils radio exempts de licence. Son fonctionnement est sujet aux deux conditions suivantes: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

(Le manuel d'utilisation de dispositifs émetteurs équipés d'antennes amovibles doit contenir les informations suivantes dans un endroit bien en vue:)

Ce dispositif a été conçu pour fonctionner avec une antenne ayant un gain maximal de dB [3.1]. Une antenne à gain plus élevé est strictement interdite par les règlements d'Industrie Canada. L'impédance d'antenne requise est de 50 ohms.

NOTE IMPORTANTE: (Pour l'utilisation de dispositifs mobiles)

Déclaration d'exposition aux radiations:

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes: (Pour utilisation de dispositif module)

1) L'antenne doit être installée de telle sorte qu'une distance de 20 cm est respectée entre l'antenne et les utilisateurs, et

2) Le module émetteur peut ne pas être coïmplanté avec un autre émetteur ou antenne,

3) Pour tous les produits vendus au Canada, OEM doit limiter les fréquences de fonctionnement CH1 à CH11 pour bandes de fréquences 2.4G grâce aux outils de microprogrammation fournis. OEM ne doit pas fournir d'outil ou d'informations à l'utilisateur final en ce qui concerne le changement de réglementation de domaine.

NOTE IMPORTANTE:

Dans le cas où ces conditions ne peuvent être satisfaites (par exemple pour certaines configurations d'ordinateur portable ou de certaines co-localisation avec un autre émetteur), l'autorisation du Canada n'est plus considéré comme valide et l'ID IC ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte au Canada.

Plaque signalétique du produit final

Ce module émetteur est autorisé uniquement pour une utilisation dans un dispositif où l'antenne peut être installée de telle sorte qu'une distance de 20cm peut être maintenue entre l'antenne et les utilisateurs. Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: "Contient des IC: 4833A- WMPN09HB1".

Manuel d'information à l'utilisateur final

L'intégrateur OEM doit être conscient de ne pas fournir des informations à l'utilisateur final quant à la façon d'installer ou de supprimer ce module RF dans le manuel de l'utilisateur du produit final qui intègre ce module.

Le manuel de l'utilisateur final doit inclure toutes les informations réglementaires requises et avertissements comme indiqué dans ce manuel.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peutfonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pourl'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectriqueà l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que lapuissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire àl'établissement d'une communication satisfaisante

以下警語適用台灣地區

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

本模組於取得認證後將依規定於模組本體標示審合格籤，並要求平台上標示「本產品內含射頻模組：ID編號」