
IWAVEPORT WLM54AGP23

USER MANUAL



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Manual Revision by Daniel

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FCC NOTICE

This device 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 device 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 device does cause harmful interference to radio or television reception, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Connect the computer into an outlet on a circuit different from that to which the receiver is connected.
- Increase the separation between the computer and receiver.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

FCC Compliance Statement: 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 must accept any interference received, including interference that may cause undesired operation.

Products that contain a radio transmitter are labelled with FCC ID and may also carry the FCC logo.

Caution: Exposure to Radio Frequency Radiation.

To comply with the FCC RF exposure compliance requirements, the following antenna installation and device operating configurations must be satisfied: For configurations using an approved external antenna, the separation distance between the antenna and any person's body (including hands, wrists, feet and ankles) must be at least 20cm (8 inch).

The transmitter shall not be collocated with other transmitters or antennas.

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.

As long as 2 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, LVD TV ...etc.).

CAUTION: This device only could work when being installed into “client devices” which could not transmit automatically, such as Notebook P.C. , with the software driver limit.

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.

WARNING: This Wireless Mini PCI Adapter does not support ad-hoc mode function

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: TK4-07-WLM54AGP23”**

ICES 003 Statement

This Class B digital apparatus complies with Canadian ICES-003.

Declaration of Conformity

Compex, Inc. declares the following:

Product Name: Compex Wireless Mini-PCI Network Adapter

Model No.: Compex iWavePort WLM54AG-23 conforms to the following Product Standards:

Radiated Emission Standards:

ETSI EN 300 328-2: July 2000; FCC: 47 CFR Part 15, Subpart B, ANSI C63.4-1992; 47 CFR Part 15, Subpart C (Section 15.247), ANSI C63.4-1992.

Conducted Emission Standards:

ETS 300 826: Nov. 1997.

Immunity Standards:

IEC 801-2; IEC 801-3; IEC 801-4

Low Voltage Directive:

EN 60 950:1992+A1: 1993+A2: 1993+A3; 1995+A4; 1996+A11: 1997

Therefore, this product is in conformity with the following regional standards:

FCC Class B — following the provisions of FCC Part 15 directive; **CE Mark** — following the provisions of the EC directive.

This Class B digital apparatus complies with Canadian ICES-003.

Technical Support Information

The warranty information and registration form are found in the Quick Install Guide.

For technical support, you may contact Compex or its subsidiaries. For your convenience, you may also seek technical assistance from the local distributor, or from the authorized dealer/reseller that you have purchased this product from. For technical support by email, write to support@compex.com.sg.

Refer to the table below for the nearest Technical Support Centers:

Technical Support Centers	
Contact the technical support center that services your location.	
U.S.A., Canada, Latin America and South America	
✉ Write	Compex, Inc. 840 Columbia Street, Suite B, Brea, CA92821, USA
☎ Call	Tel: +1 (714) 482-0333 (8 a.m.-5 p.m. Pacific time)
☎ Call	Tel: +1 (800) 279-8891 (Ext.122 Technical Support)
☎ Fax	Fax: +1 (714) 482-0332
Asia, Australia, New Zealand, Middle East and the rest of the World	
✉ Write	Compex Systems Pte Ltd 135, Joo Seng Road #08-01, PM Industrial Building Singapore 368363
☎ Call	Tel: (65) 6286-1805 (8 a.m.-5 p.m. local time)
☎ Call	Tel: (65) 6286-2086 (Ext.199 Technical Support)
☎ Fax	Fax: (65) 6283-8337
Internet access/	E-mail: support@compex.com.sg
Website:	FTPsite: ftp.compex.com.sg
	http://www.cpx.com or http://www.compex.com.sg

• Introduction

Thank you for purchasing this Wireless Network Adapter. Data security is facilitated with WPA, IEEE 802.1x Authentication and 64-bit, 128-bit and 152-bit WEP (Wired Equivalent Privacy). They support easy Plug and Play installation and combine simplicity, data privacy, and reliability for your wireless network.

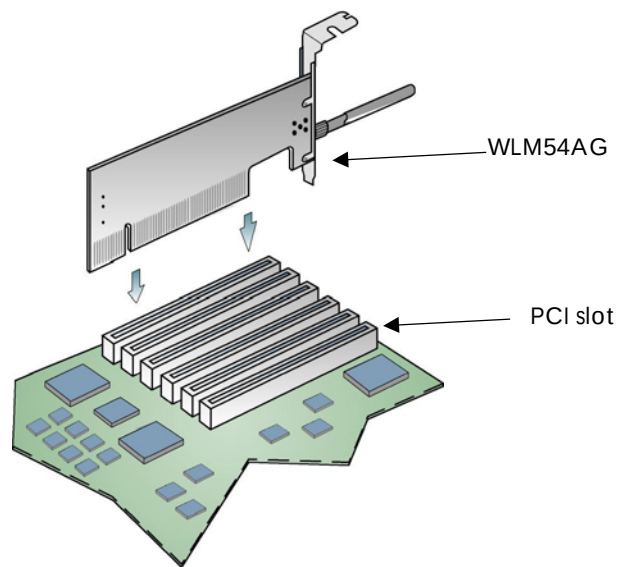
Chapter 1 Basic Setup

This chapter outlines the basic requirement for the installation and configuration of the network adapter.

This network adapter is a plug-and-play device. You can plug it into the PCI slot of your PC for auto-detection.

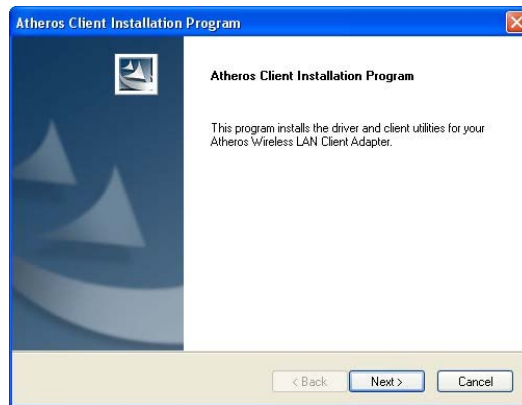
1.1 Hardware Installation

1. Turn off your PC and switch off the power from the main power supply.
2. Remove the back cover of the PC.
3. Then insert the network adapter into your PCI slot as shown below. Ensure that the network adapter is properly seated into the slot.
4. Replace the back cover.
5. Power on your PC.



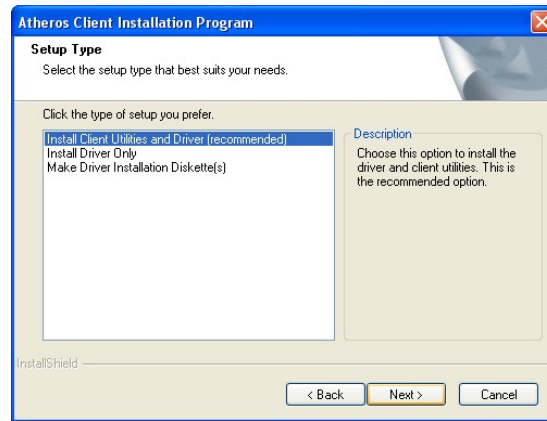
1.2 Driver & Utility Installation

1. Insert the Product CD into your computer CD-ROM drive.
2. Click on **Driver & Utility** section and the system will run the *setup.exe* automatically.
3. Next, the **Atheros Client Installation Program** screen appears. Click on the **Next>** button to proceed.



4. When the License Agreement screen appears, you are required to read and accept the agreement to continue. Click on the **Next>** button to proceed.

-
5. Select your preferred setup:



Install Client Utilities and Driver (Recommended) option

You are recommended to select this setup type. This option will install both the driver and utility that support your PCI adapter.

Install Driver Only option (For Windows XP user only)

Select this option if you are going to use the Wireless Zero Configuration Utility to configure your PCI adapter. Note that only Windows XP comes with the Wireless Zero Configuration Utility.

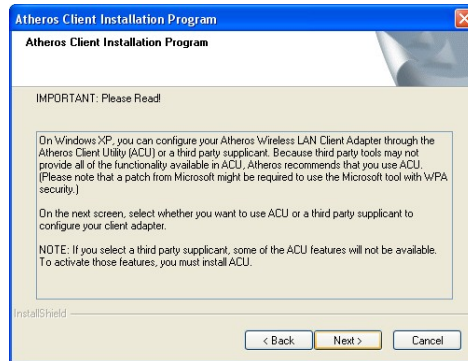
Make Driver Installation Diskette(s)

Select this option if you wish to make a duplicate copy of the driver and store to the diskette/s.

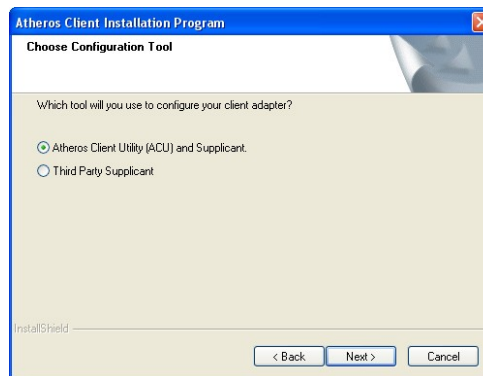
6. Click on the **Next>** button and follow the instructions stated on the screen.

For Windows XP users

7. If you are using Windows XP as operating system, the following screen will appear. Read the notice carefully and click on the **Next>** button to proceed.



8. Select your choice of tool to assist you in configuring your adapter. Click on the **Next>** button to proceed.



Atheros Client Utility (ACU) and Supplicant option

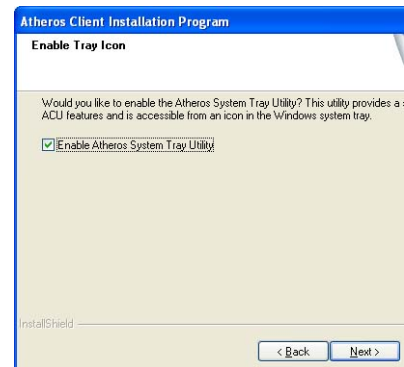
Select this option to install your network adapter. (Recommended)

Third Party Supplicant option

Select this option if you decide to use Wireless Zero Configuration Utility to configure your wireless device. Installing this tool will only allow you to view the status of the connected wireless device/s through the utility; configuration using the utility will not be allowed.

If you have selected **Third Party Supplicant** configuration tool, a screen similar to that below will appear, prompting you to enable/disable the system tray icon.

9. Click on the checkbox besides **Enable Atheros System Tray Utility** and click on the **Next>** button to proceed.



10. The screen below appears to inform you that the driver will be automatically installed if you have already inserted your client adapter into the PCI slot of your computer.

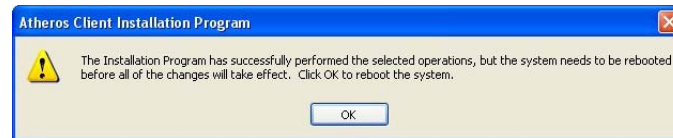


Cancel the **Found New Hardware** Wizard if it appears and click on the **OK** button to begin the installation.

11. If a similar screen similar to the one shown below appears, click on the **Continue Anyway** button to continue the installation.

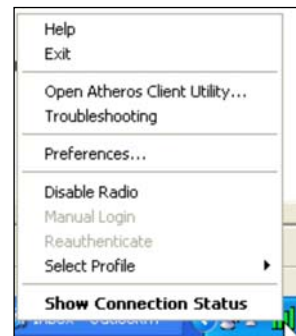


12. Click on the **OK** button to reboot your system and this will complete the installation.



Chapter 2 Using the System Tray Utility

This chapter will elaborate on the Atheros system tray utility found at the right bottom corner of your screen. Right click on the utility icon and the menu will appear.



The following explains the different options available on the menu:

Help

Open the online help.

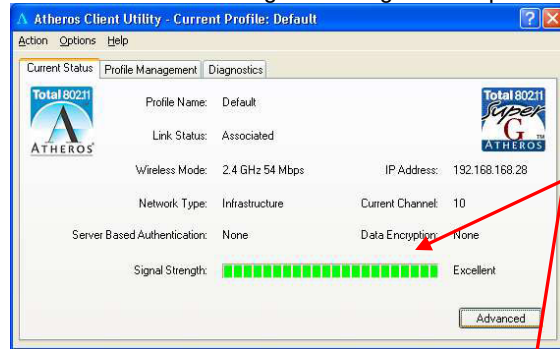
Exit

Exit the Atheros Client Utility application. Once you exit, the icon will disappear from the system tray.

Open Atheros Client Utility...

Launch the Client Utility.

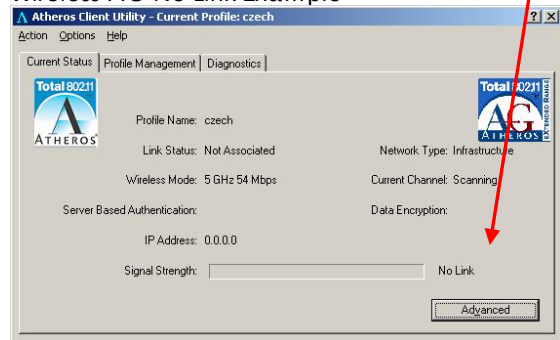
Wireless-G Excellent Signal Strength Example



Different signal strength indications



Wireless-AG No Link Example



Manual LEAP Login

If you select this option, you will have to manually start the LEAP authentication process to login to the network instead of being prompted for your LEAP username and password during your windows logon.

Enter Wireless Network Password

Please enter your LEAP username and password to log on to the wireless network.

User Name : sampleUserName

Password :

Log on to : sampleDomain

Card Name : Atheros USB 2.0 Wireless Network Adapter

Profile Name : Default

OK Cancel

Reauthenticate

Reauthenticate to a LEAP-configured access point each time you login to a LEAP network.

LEAP Authentication Status

Card Name: Atheros USB 2.0 Wireless Network Adapter

Profile Name: ESSID

Steps

-> 1. Starting LEAP Authentication

2. Checking Link Status

3. Renewing IP address

4. Detecting IPX Frame Type

5. Finding Domain Controller

Status

Processing...

Cancel

Select Profile

Click on a configuration profile name to switch to a particular wireless network. If no configuration profile exists, you will need to add a profile first.

Connection Status

To view the connection status of your wireless PCI adapter.

Alternatively, you may also double click on the utility icon in the system tray.

Active Profile	Displays the name of the active configuration profile.
Auto Profile Selection	Shows whether auto profile selection is enabled.
Connection Status	Displays whether the adapter is connected to a wireless network.

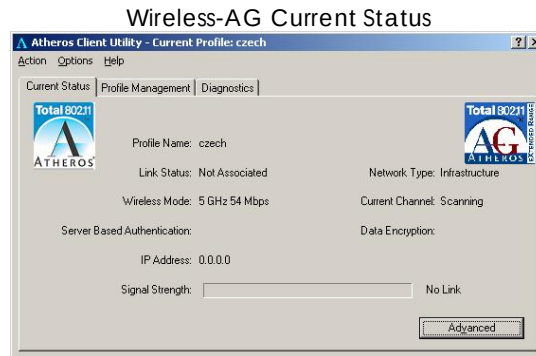
Link Quality	States the quality of the link connection.
SSID	Displays the SSID of the network to which the network adapter is associated.
Access Point Name	Shows the name of the access point the wireless adapter is connected to (if any).
Access Point IP Address	Shows the IP address of the access point the wireless adapter is connected to (if any).
Current Receive Rate	Displays the data rate at which the wireless adapter is currently receiving from the wireless network.
Current Transmit Rate	Displays the data rate at which the wireless adapter is currently transmitting to the wireless network.
Link Speed	States the speed of the link connection.
Client Adapter IP Address	Displays the IP address of the wireless adapter.

Chapter 3 Utility Features

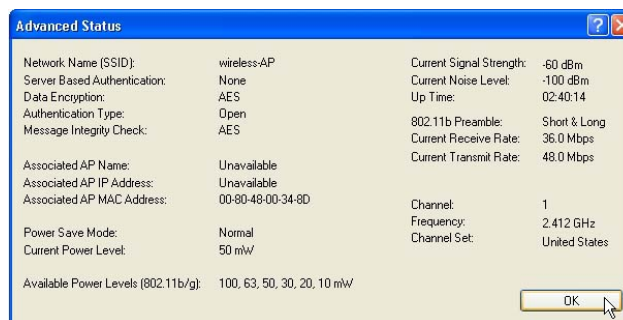
This chapter shows you how to make use of the utility to view the status of your wireless connection, to change your settings and also to monitor your wireless performance via the network statistics.

3.1 Current Status Tab

Displays the performance of the network adapter in the wireless network.



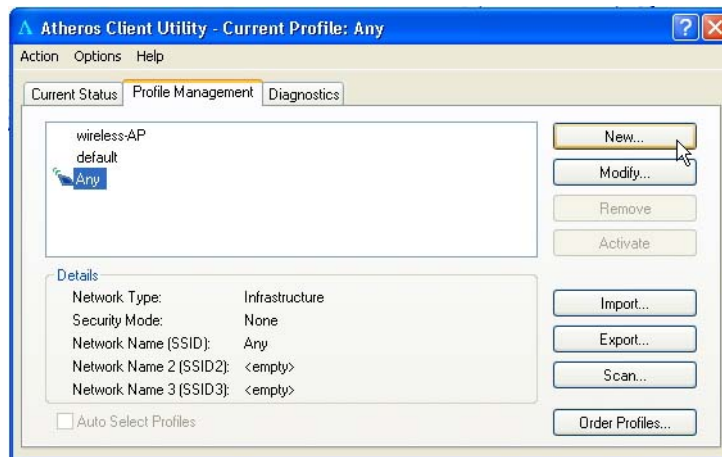
Upon clicking on the **Advanced** button, you will be able to view all information on the respective profile, e.g. the types of encryption and authentication, the signal strength, the MAC address of the connected AP (if you are in Infrastructure mode), etc.



3.2 Profile Management Tab

Selecting this tab displays the profiles and the details.

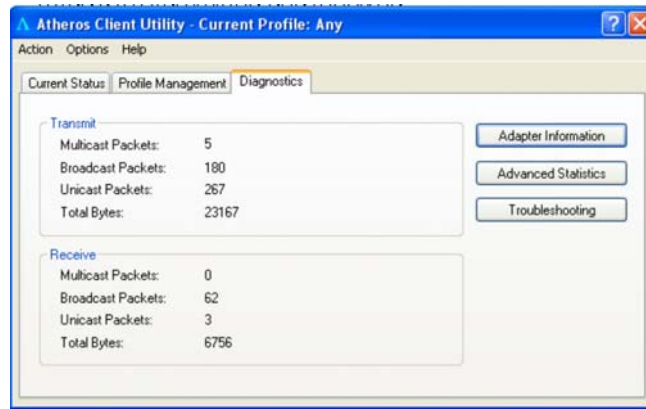
You only need to create a profile if you have more than one wireless connection.



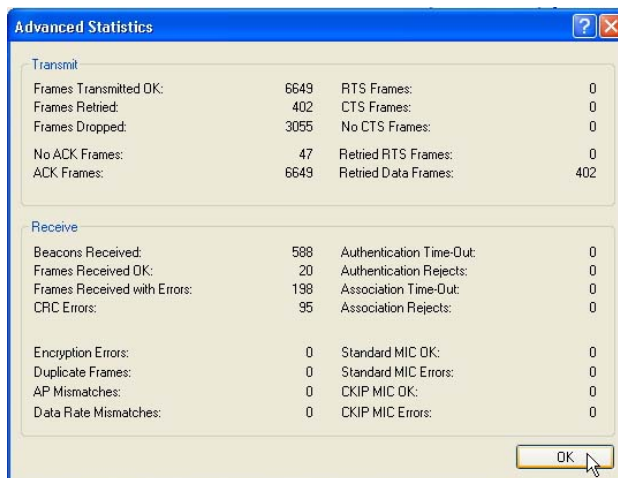
3.3 Diagnostics Tab

The **Diagnostics** tab lists the following receive and transmit diagnostics for packets received by or transmitted to the network adapter.

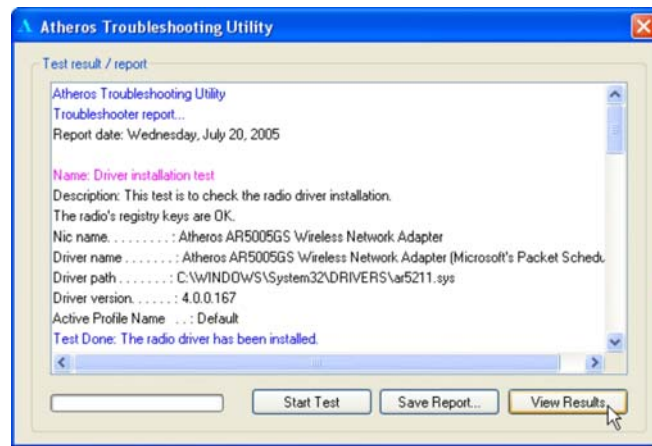
- Multicast packets transmitted and received
- Broadcast packets transmitted and received
- Unicast packets transmitted and received
- Total bytes transmitted and received



This button shows more detailed statistical information on frames that are either received by or transmitted by the network adapter.



This button allows you to run the diagnostic test, save the test report and view the test results on the wireless adapter configuration and association.



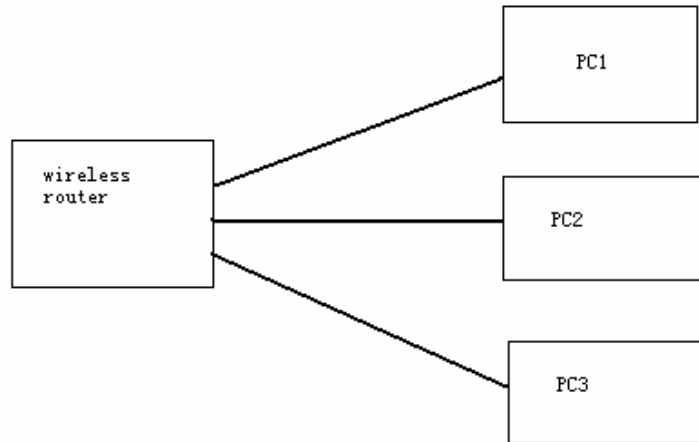
Chapter 4 Utility Configuration

This chapter will elaborate on the Client Manager configuration of the network adapter using some simple examples.

the wireless clients communicate through router, which are devices that act as base station for all wireless communication. Data packets from the wireless clients are transferred to the wireless router before being transmitted to other hosts on the network. The number of wireless clients supported depends on the router.

4.1 Configuration Mode

In this example, three work station act as wireless clients to communicate with the wireless router. Once all configuration has been done, wireless clients with the same SSID as the AP will be able to access wirelessly to PC1 via the wireless router

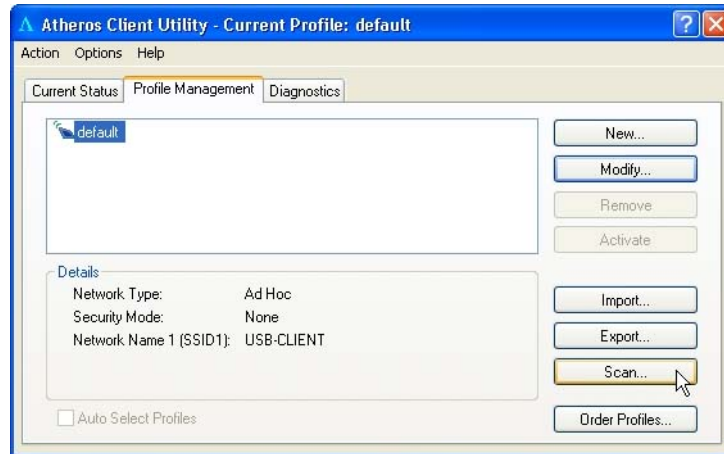


For Router

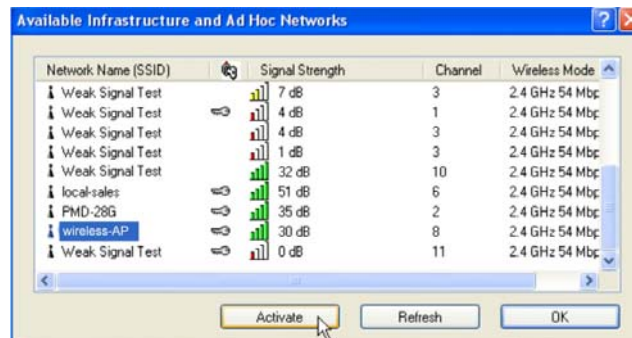
Ensure that you have enabled the DHCP server in your router and that your wireless clients are set to receive their IP address dynamically so that the wireless router can assign an IP address to them. Note the wireless configuration settings of your router as shown in the figure above.

For PC 1

1. Activate your utility.
2. Go to the **Profile Management** tab, click on the **Scan** button to look for the wireless AP.



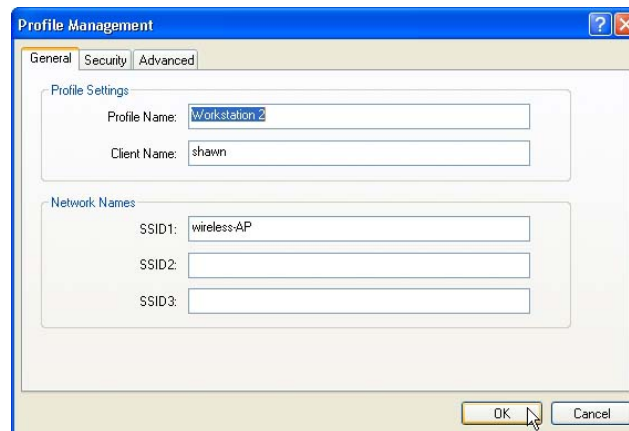
3. Click on the **Refresh** button if your system is unable to detect your wireless AP. Once found, select the **Network Name (SSID)** used by the router: *wireless-router* and click on the **Activate** button to add it to your profile list.



Notice that the SSID has already been pre-configured in this profile.

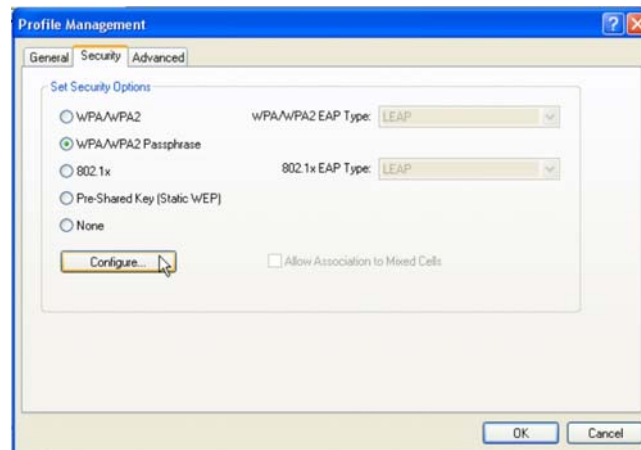
The SSID of both the wireless router and the wireless client must be the same for them to communicate with one another.

4. Enter the **Profile Name**, e.g. *Workstation 2* for easy identification.

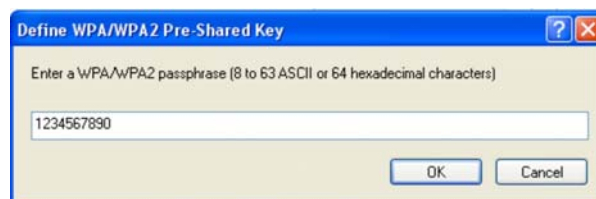


The screenshot shows a Windows-style dialog box titled "Profile Management". It has three tabs: "General", "Security", and "Advanced", with "General" currently selected. The dialog is divided into two main sections. The first section, "Profile Settings", contains two text input fields: "Profile Name:" with the text "Workstation 2" entered, and "Client Name:" with the text "shawn" entered. The second section, "Network Names", contains three text input fields labeled "SSID1:", "SSID2:", and "SSID3:". The "SSID1:" field contains the text "wireless-AP", while "SSID2:" and "SSID3:" are empty. At the bottom right of the dialog, there are two buttons: "OK" and "Cancel". A mouse cursor is pointing at the "OK" button.

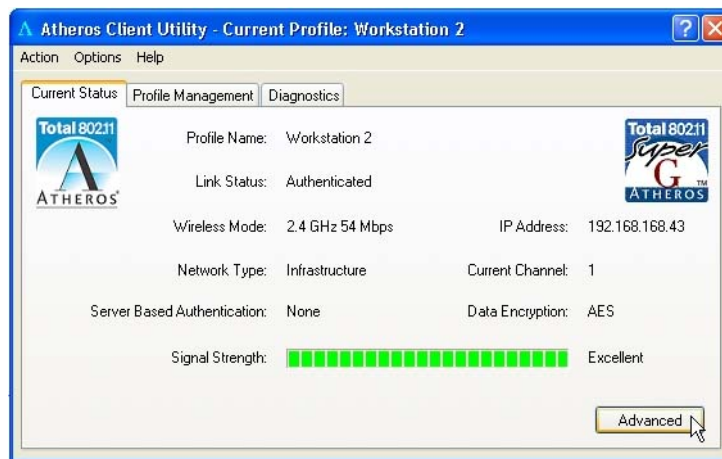
- Next, proceed to the **Security** tab. The wireless client must use the same security mode as the router. In our example, select **WPA Passphrase** and click on the **Configure...** button.



- Enter the encryption key in the field provided. Please note that this key must be the same as the one that you had configured for your wireless router.
- Click on the **OK** button to update the changes.



Proceed to your **Current Status** tab to monitor the connection between the router and the wireless client (PC2).



Alternatively, you can also check the connection from the MS-DOS Prompt. From PC2, simply proceed to the **Start** Menu, **Run...** and type in *cmd*. Click on the **OK** button.

In the MS-DOS Prompt window, type *ping 192.168.168.1 -t*, whereby this IP address belongs to your access point.

When the screen appears:

Pinging 192.168.168.1: bytes=32 time=2ms TTL=128

Pinging 192.168.168.1: bytes=32 time=2ms TTL=128

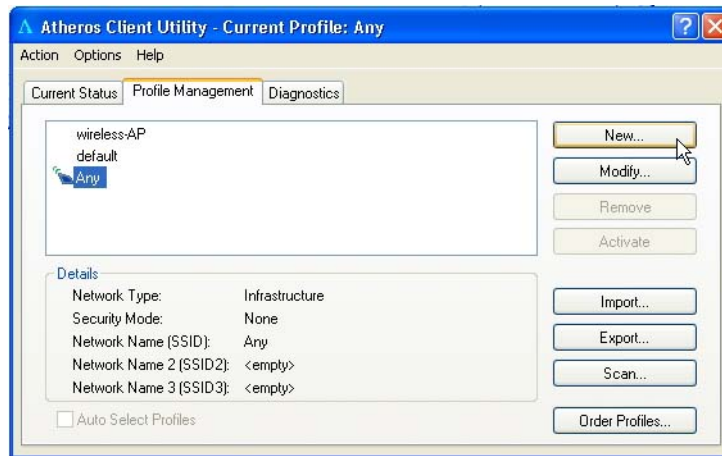
Pinging 192.168.168.1: bytes=32 time=2ms TTL=128

.....

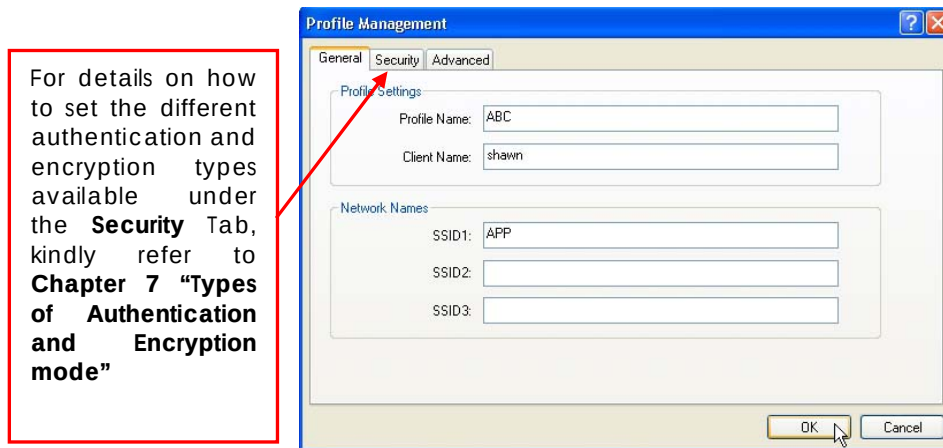
This indicates that the connection between the access point and the wireless client has been established successfully!

4.2 Profile Management

This option allows you to manage your profile(s), set your security options, and scan for other wireless networks.

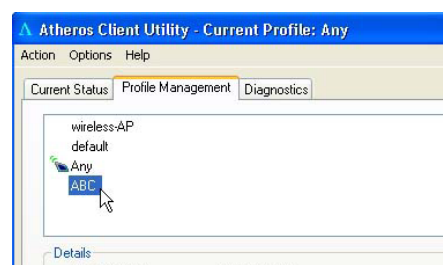


Click on **New** button to create a new profile. Enter the profile name (a unique name to identify this profile), a client name and the SSID of the wireless network to connect to. Note that the **Client name** refers to the name that is registered to your PC. You can enter up to 3 different SSIDs in order of preference, per profile. We are using *ABC* as the profile name and *APP* as the SSID1



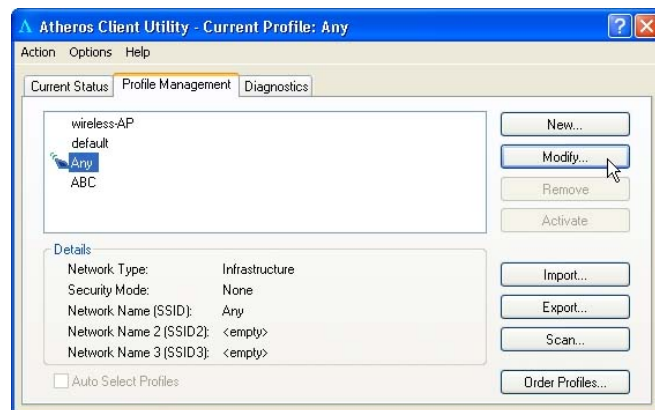
Click on the **OK** button to update the changes.

Notice that ABC has been added to the profile list.



Modify...

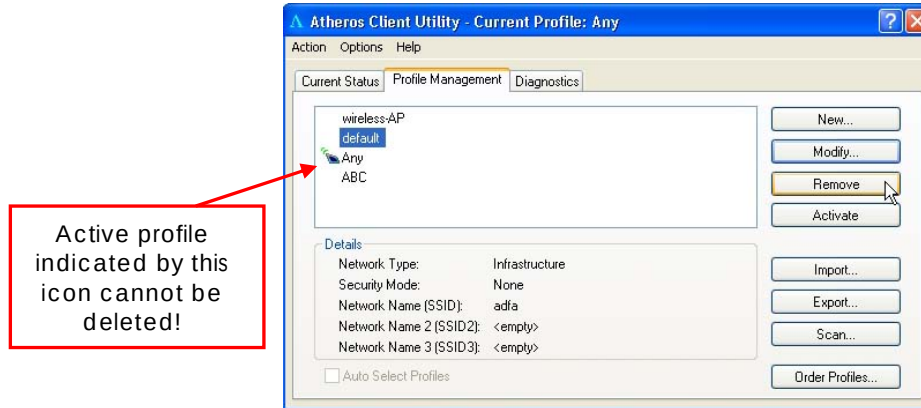
To modify an existing profile, select the profile that you wish to modify and click on this button. We are using profile: *Any* as an example.





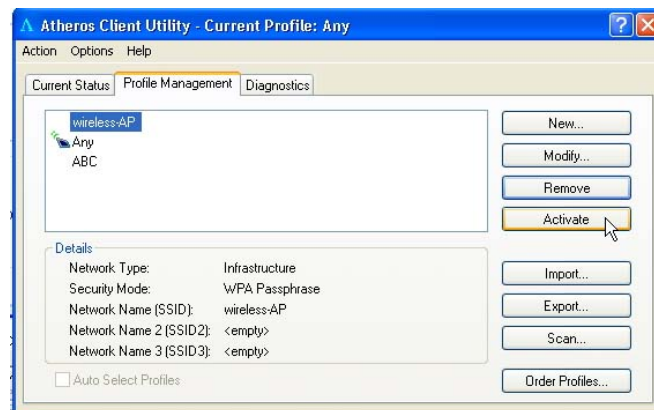
To delete an existing profile, select the particular profile that you wish to delete and click on this button. We are using profile: *default* as an example.

Note that the active profile (the profile that you are currently using) cannot be deleted!

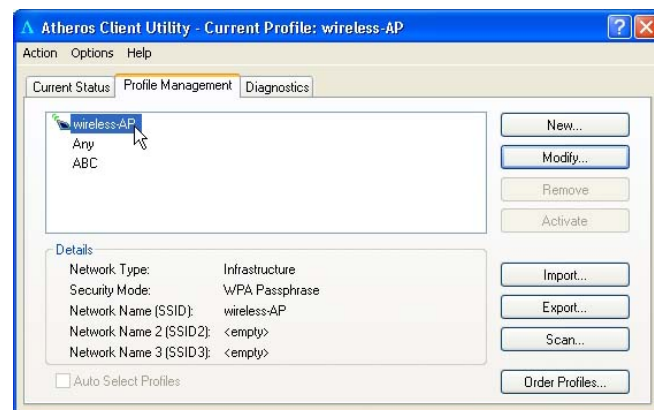


Activate

To activate a profile, select the profile and click on this button. We are using profile: *wireless-AP* as an example.



Once a profile is activated, this  icon will appear next to the profile name: *wireless-AP*.





This function allows you to save the settings of your profile onto disk. Select the profile that you wish to save and click on this button. We are using profile: *ESSID* as an example.

Choose the folder to save to, enter the name under which to save the profile and click on the **Save** button.



Now, your profile is saved to your selected folder.

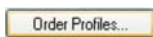
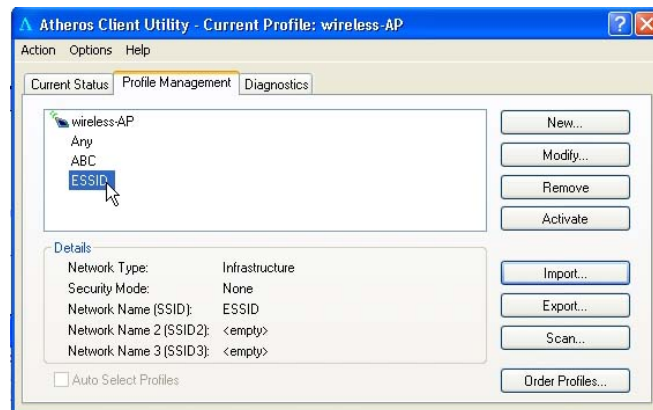


This function allows you to retrieve a saved profile from disk. We are using profile: *ESSID* as an example.

Go to the folder where you have saved your profile, select *ESSID.prf* and click on the **Open** button.



Notice that the profile: *ESSID* has been imported to the list of profiles.



If you have created several profiles, this function allows you to establish the priority order in which the network adapter should try to connect to a WLAN. If the network adapter is unable to connect to a wireless network

through the 1st profile, it will then try to connect using the 2nd profile and so on.

Notice that if this function is disabled, this means that you have not added any profile in the **Auto Selected Profiles** list.

Details

Network Type:	Infrastructure
Security Mode:	WPA Passphr.
Network Name (SSID):	wireless-AP
Network Name 2 (SSID2):	<empty>
Network Name 3 (SSID3):	<empty>

☐ Auto Select Profiles

When auto profile selection is enabled, the network adapter scans for available access points and will connect to the highest priority profile that matches the access points detected

To do so, simply click on the **Add** button from the **Available Profiles** list. Refer to the screen shown below.

Details

Network Type:	Infrastructure
Security Mode:	WPA Passphrase
Network Name 1 (SSID1):	wireless-AP
Network Name 2 (SSID2):	<empty>
Network Name 3 (SSID3):	<empty>

☒ Auto Select Profiles

Please note that you need AT LEAST TWO profiles to activate the **Auto Select Profiles** function; and that each of your profile must connect to at least one **Network Name (SSID)**.

Auto Profile Selection Management

Available Profiles:

- wireless-AP
- Any
- ABC
- ESSID

Add

Auto Selected Profiles:

Move up

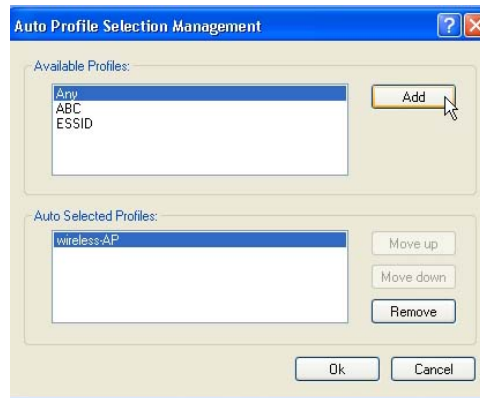
Move down

Remove

Ok Cancel

Notice that when a selected profile has been added, it will be transferred to the **Auto Selected Profiles** list.

Select and click on the **Add** button to transfer another profile.



You need to transfer at least two profiles to the **Auto Selected Profiles** list to activate the **Auto Select Profile** function.

Transmit Power Level

Specifies the wireless transmit power to be used. Reducing the power level lowers the risk of interference with other nearby wireless devices and conserves battery power but decreases radio range.

Power Save Mode (Only applicable to Infrastructure mode)

This feature reduces power consumption by the PCI adapter. There are 3 options for this mode:

- **Off**
The power management is disabled and the card consumes full power from the computer.
- **Normal**
The driver turns off the power to the adapter for brief periods over briefly spaced time intervals.
- **Maximum**
The driver turns off power to the adapter for longer periods over more widely spaced time intervals.

The guideline for choosing between the **Normal** and **Maximum** options:

The PCI adapter wakes up more often and responds sooner to network requests in **Normal** mode than in **Maximum** mode; and the **Maximum** mode consumes less power than **Normal** mode.

Network Type

Select either **Infrastructure** if you are connecting to the WLAN using an access point

802.11b Preamble

The preamble is part of the IEEE 802.11b physical layer specification. It is mandatory for all 802.11b devices to support the long preamble format, but they may optionally support the short preamble. This PCI adapter supports both the short and long preambles.

- **Short & Long**
This option allows communication with other 802.11b devices that support short preamble to boost the throughput.
- **Long Only**
If your device is having trouble to communicate with other 802.11b devices, you may try to select the Long Only option.

802.11 Authentication Mode (Only applicable to Infrastructure mode, after you have enabled the encryption mode)

Select which mode the wireless adapter uses to authenticate to an access point:

- **Auto**
Causes the PCI adapter to attempt authentication using shared authentication. It then switches to open authentication if shared authentication fails.
- **Open**
Enables the PCI adapter to attempt authentication regardless of its WEP settings. It will only associate with the access point if its WEP settings match those of the access point.
- **Shared**
Allows the adapter to authenticate and associate only if it has the same WEP settings as the access point

Appendix

1. Technical Specifications

Network Protocol, Standards and Electrical Emissions	
Industry Standards	• IEEE 802.11g • IEEE 802.11b • IEEE 802.11a
Performance	
Operating Frequency	• 2412~2462MHz • 5250~5350MHz, 5470~5725MHz, 5725~5825MHz
Modulation	• Binary Phase Shift Keying (BPSK) • Quadrature Phase Shift Keying (QPSK) • Complementary Code Keying (CCK) • 16 QAM • 64 QAM • DBPSK • DQPSK
Antenna Type	External 2dBi antenna and an SMA-type connector
Network Interface	PCI 2.3 compatible

Physical and Environment	
Environmental Requirements	
Operating temperature:	0°C to 50°C
Storage temperature:	-20°C to 70°C
Operating humidity:	10% to 70% RH
Non-operating humidity:	5% to 90% RH
Power Consumption	3.3V DC, 500mA 350mA Tx 250mA Rx
Physical Dimension	120mm x 64.5 mm x 1.6 mm (LxWxD)