User's Guide

Wireless LAN Access Point

Version 3.10

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INFORMATION TO USER

FCC INFORMATION

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.

- The 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 instruction, may cause harmful interference to radio communication. However, there is no grantee that interference will not occur in a particular installation. If this equipment dose 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 connected.
- --Consult the dealer or an experienced radio/TV technician for help.
- Notice: The Part 15 radio device operates on a non-interference basis with other devices operating at this frequency. Any changes or modification not expressly approved by the party responsible could void the user's authority to operate the device.

REGULATORY INFORMATION

The Wireless LAN Access Point must be installed and used in strict accordance with the manufacturer's instructions. This device complies with the following radio frequency and safety standards.

USA - Federal Communications Commission (FCC)

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.
- 2. This device must accept any interference that may cause undesired operation.

Europe - R&TTE Directive

This device complies with the specifications listed below

- ETS 301-489 -1&-17 General EMC requirements for Radio equipment.
- ETS 300-328 Technical requirements for Radio equipment.
- EN60950 Safety Requirements for Radio equipment

1 Introduction

The Access Point is a wireless LAN bridge that can act as the connection point between the Ethernet CSMA/CD protocol and the wireless CSMA/CA protocol. The Access Point can be easily integrated into your existing wireless network. In large installations, the roaming functionality provided by multiple Access Points allows wireless users to move freely throughout the facility while maintaining seamless, uninterrupted access to the network.

This document describes the steps required for the initial IP address assign and AP configuration. The description includes the implementation of the above steps.

1.1 Installation Requirements

Before you begin installation, make sure that you have the following items:

- The Access Point
- The AC to DC power adapter
- The Documentation CD

You will also need:

• A computer that is connected to the same network as the Access Point.

1.2 System Requirements

- Desktop or laptop PC configuration through Ethernet:
- Operating System: MS Windows 9X, ME, 2000, XP.

2. Wireless LAN basics

Wireless LAN network defined by IEEE 802.11b standard committee could be configured as:

- Ad Hoc wireless LAN, or
- Infrastructure wireless LAN.

Ad Hoc network is a group of notebooks with wireless LAN PC card called a BSS (Basic Service Set). These notebooks use their wireless LAN PC cards to communicate with each other, and notebooks cannot connect to the **Internet**.

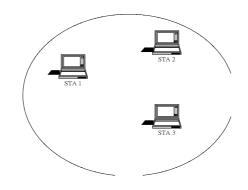


Figure 2-1 Ad Hoc wireless network

The most obvious differentiation between **Infrastructure** wireless network and **Ad Hoc** wireless network is that the notebooks in **Infrastructure** wireless network can make use of the resource in the Internet through **Access Point**.

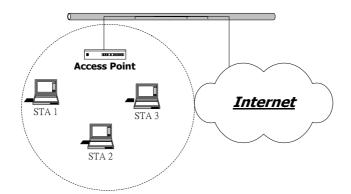


Figure 2-2 Infrastructure wireless network

To set up your notebook's network as the type of "Ad Hoc" or "Infrastructure" wireless network depends completely on your requirement. Generally, if your network environment has an Access Point, we recommend that you set it as "Infrastructure" to connect to the Internet.

3. Installation

This section describes the procedures for installing the Wireless LAN Access Point under Windows 98 SE operating system.

Before You Start

Before setting up your Access Point, ask your network system administrator for the following information:

- Your IP address, gateway address, and subnet mask if you're not using a DHCP server.
- The MAC address from the label on the bottom of the Access Point.
- Your Wireless Client Name
- Your Wireless SSID
- Your computer's unique client name and workgroup name
- For your network account, your user name and password.

Every computer on a network is identified by a unique network address. There are two methods of assigning network addresses to computer on a TCP/IP network:

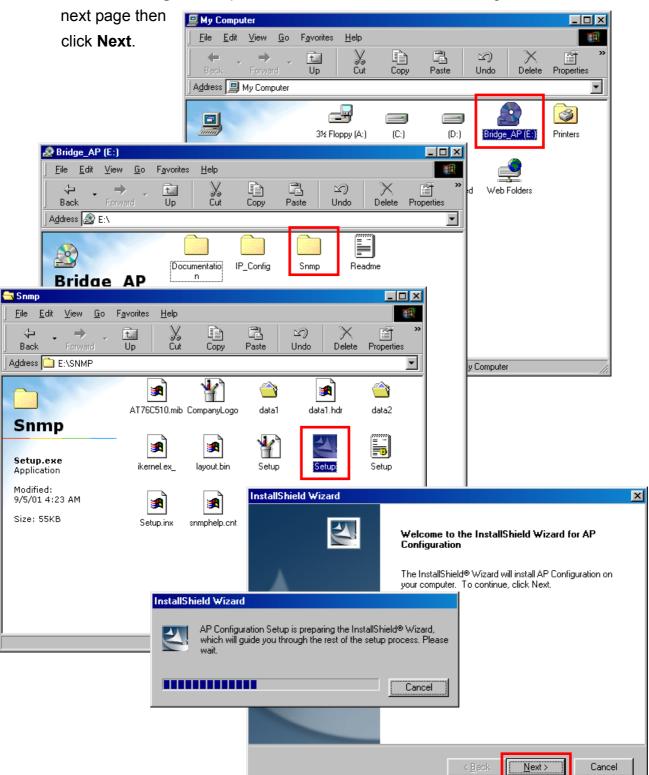
- Static IP addressing
- Dynamic IP addressing (DHCP)

In networks with **static IP addressing**, the network administrator manually assigns an IP address to each computer. Once a static IP address is assigned, a computer uses the same IP address every time it reboots and logs on to the network. You may manually change the IP address in the **Network Properties dialog box**. Networks using static IP addresses are easy to set up and do not require additional network management software.

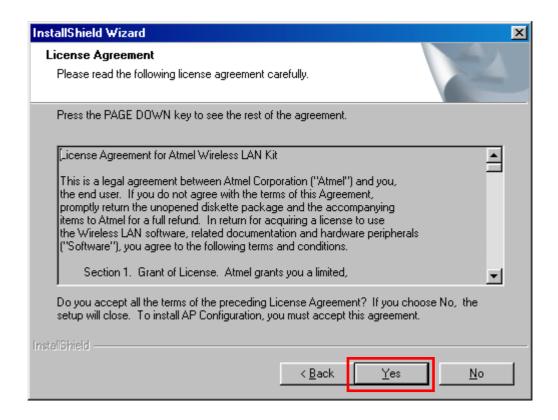
In networks with **dynamic IP addressing**, a DHCP server in the network dynamically assigns IP addresses to all clients every time they log on to the network. Network using dynamic IP addresses require setting up and running a DHCP Server or installing the Wingate software package.

3.1 Install the SNMP Manager application Under Windows 98 SE

Step 1. Insert the given **Documentation CD** and then double click "**MY Computer**" icon on desktop. In **my computer** window, double click the **Bridge_AP CD Drive** icon. Choose SNMP folder and then double click **Setup** to install "**SNMP Manager**". It opens the **InstallShield Wizard** dialog box as shown



Step 2. Software License Agreement, click Yes to accept.



Step 3. Click Next to install to this folder.

InstallShield Wizard	×
Choose Destination Location	Allen IV COL
Select folder where Setup will install files.	
Setup will install AP Configuration in the following folder.	
To install to this folder, click Next. To install to a different folder, click Brow another folder.	wse and select
Destination Folder	
C:\Program Files\WLAN Utilities\AP Configuration	B <u>r</u> owse
InstallShield	,
< <u>B</u> ack	Cancel

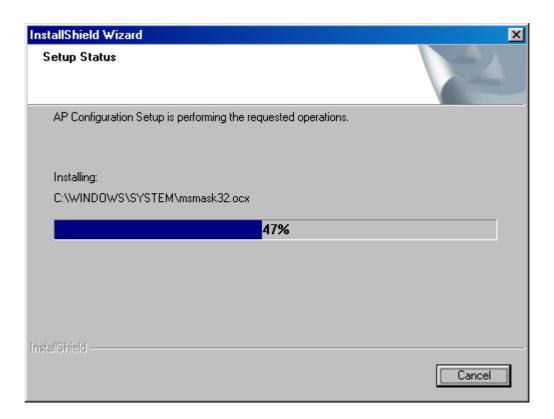
Step 4. Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the Existing Folders list. Click **Next** to continue.

InstallShield Wizard
Select Program Folder Please select a program folder.
Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the existing folders list. Click Next to continue.
Program Folders:
Wireless LAN Utilities\AP Configuration
Existing Folders:
Accessories StartUp
InstallShield <u>Kext > Cancel</u>

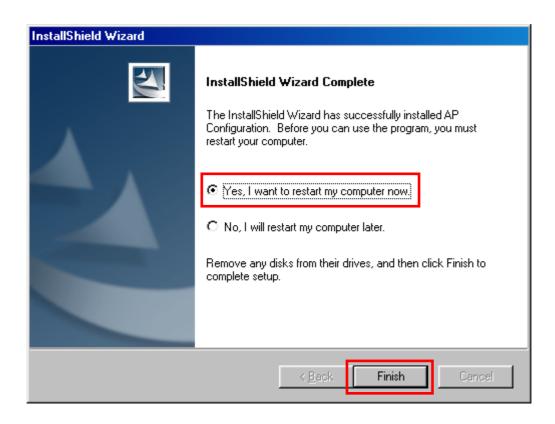
Step 5. Review settings before copying files, click **Next** to start copying files.

InstallShield Wizard	×
Start Copying Files	
Review settings before copying files.	
Setup has enough information to start copying the program files. If you want to review or change any settings, click Back. If you are satisfied with the settings, click Next to begin copying files.	
Current Settings:	
The chosen destination path is: C:\Program Files\WLAN Utilities\AP Configuration	
The (one and only) type of setup is: Compact	
The selected program Folder is: Wireless LAN Utilities\AP Configuration	
The supported Operating Systems are: 	
InstallShield	
< <u>B</u> ack Cancel	J

Step 6. Start copying files.



Step 7. Click Finish to complete Setup.



3.2 Setting the IP Address

Each station or device on your network must have a unique IP address. Following these steps to setting the IP address:

- Step 1 Connect an Ethernet station and the Access Point on the same subnet. The simplest way to accomplish is to connect the Access Point and the Ethernet station to the same hub. You need to check if the station IP address and the Sub-net mask are configured properly. Also the new IP address for the Access Point must correspond to the Subnet mask.
- Step 2. In my **computer window**, double click the **Bridge_AP CD Drive** icon. Choose **IP_Config** folder and then double click **IPConfig** to execute. Then **IPConfig screen displays** as shown.

🛄 My Computer	
<u>F</u> ile <u>E</u> dit <u>V</u> iew <u>G</u> o F <u>a</u> vorites <u>H</u> elp	-
	ř »
Back Forward Up Cut Copy Paste Undo Delete F	Properties
Address 📟 My Computer	
	3
	Printers
Bridge_AP (E:)	
Back Forward Up Cut Copy Paste Undo Delete Properties	
Address 🔊 E:\	
Documentatio IP_Config Snmp Readme	
Bridae AP	
TP_Config	
File Edit View Go Favorites Help	
↓ ↓ ↓ ↓ ↓ ↓ Back Forward Up Cut Copy Paste Undo Delete Properties	
Address 🗀 E:\IP_Config	
	///
PConfig Access Point IP Configuration	
IP_Config	
Access Point MAC Address	
Select an item to view its description.	
Config IP	
😂 Clear All 🛛 🗸 OK 🛛 🗶 Cancel	
409KB 🛄 My Computer	
12	

Step 3. Type the "*Access Point MAC Address*" from the label on the bottom of the Access Point, type the "*Config IP*" address from your system administrator, and then click "*OK*".

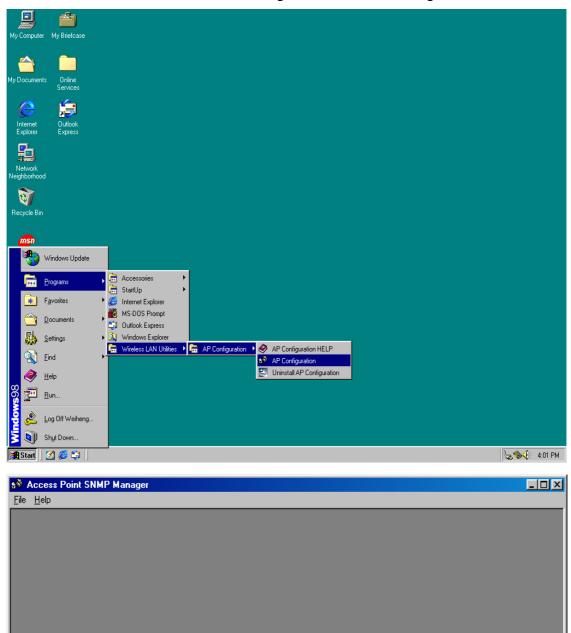
Access Point IP Configuration						
Access Point MAC Address						
Config IP	ß					
🔁 Clear All 🛛 🗸 OK 🛛 🗶 Cancel						

Step 4. Open a MS-DOS Prompt window and type *ping* followed by the IP address used in the *IP Config*. The IP address is assigned to the Access Point . The Access Point's replies to the *ping* confirm that the IP address was assigned correctly.

Auto Microsoft(R) Windows 98 (C)Copyright Microsoft Corp 1981-1999. C:\WINDOWS>ping 192.168.0.1 Pinging 192.168.0.1 with 32 bytes of data: Reply from 192.168.0.1: bytes=32 time<10ms TIL=64
<pre>(C)Copyright Microsoft Corp 1981-1999. C:\WINDOWS>ping 192.168.0.1 Pinging 192.168.0.1 with 32 bytes of data: Reply from 192.168.0.1: bytes=32 time<10ms TTL=64</pre>
Pinging 192.168.0.1 with 32 bytes of data: Reply from 192.168.0.1: bytes=32 time<10ms TTL=64
Reply from 192.168.0.1: bytes=32 time<10ms TTL=64
Reply from 192.168.0.1: bytes=32 time<10ms TTL=64 Reply from 192.168.0.1: bytes=32 time<10ms TTL=64 Reply from 192.168.0.1: bytes=32 time<10ms TTL=64
Ping statistics for 192.168.0.1: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = Oms, Maximum = Oms, Average = Oms
C:\WINDOWS>_

Step 5. If you get a ping reply, then the IP address has been temporarily set. In order to set it permanently you need to run SNMP Manager without powering off the Access Point.

3.3 Using the SNMP Manager



On the Start Menu, choose Start->Programs->SNMP Manager.

Manager opened successfully

File menu

When the application opens, under the **File** Menu there are the following submenus:

Connect to AP

Using this submenu you can directly connect with the Access Point by typing its IP Address in the panel which appears and at the Community field, type the appropriate password (The default password is "**public**"). Additionally you have to select the **User** or **Administrator Authority** in the Authority combo-box. **User Authority** allow you only to view and not to set or save changes to the Access Point Configuration, while **Administrator Authority** allow you to either view or set changes to the Access Point Configuration. Then press **OK**.

S Access Point SNMP Manager		
File Help Connect to Access Point Ctrl+C Find Access Point Ctrl+F Close Connection AP Ctrl+L		
Exit	Connect to Access Point IP Address 192.168.0.1 Community ****** Authority User OK Cancel	
Connect to Acc IP Address Community Authority OK	192.168.0.1 ***** User User Administrator	
Manager opened successfully	Connect to Access Point X IP Address 192.168.0.1 Community ****** Authority Administrator OK Cancel	
	SNMPmanager 802.11 AP (Ver. 1.4h.3) NONE found	

In case of a successful connection to the Access Point, the following window appears press "**OK**"

If your network has a DHCP server IP Address can be automatically assigned to the Access Point.

Find Access Point

This submenu allows you to find and connect with an Access Point without the necessity of knowing its IP Address. Choose this submenu in order to find the Access Points available for connection. Select one of the available Access Points and press "**Connect**", then appears indicating the IP Address of the selected Access Point and prompting you to select Authority and to write the appropriate password at the community field. Then press "**OK**".

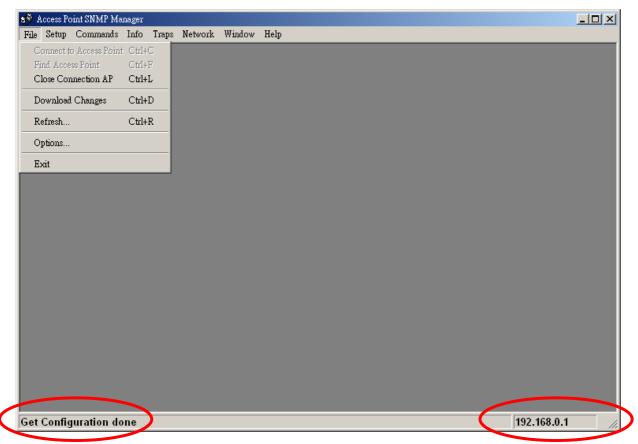
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<u>File</u> <u>H</u> elp							
Connect to Access Point							
	Ctrl+F Ctrl+L			Available Access Points		<u>></u>	4
				Name		IP Address	
E <u>x</u> it				802.11 AP (Ver. 1.4h.3) NONE		192.168.0.1	
		Connect to Acc	ess Poir	t 🔀			
		IP Address	192.1	68.0.1			
		Community	*****	+			
			<u> </u>				
		Authority	User	<u> </u>			
Connect to Acces	s Point	<u> </u>		Cancel			
		H					
IP Address	192.168.0.1			J			
Community	*****			Connect	Can	cel 1	
Authority	User			Connoc			
	User						_
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		IP Address 19	2.168.0.	1			
		Community	***				
		Authority Ad	ministra	tor 🗾 🔽			· · .
				a 1 1			
		OK		Cancel			
	ļ		SNMP	nanager	\times		
			•) 802.11 AP (Ver. 1.4h.3) found	NUNE		
			4				
				OK			

In case of a successful connection to the Access Point, the following window appears press " \mathbf{OK} "

When the connection has been successfully established, you get a message in the left bottom corner indicating, "**Get Configuration done**" and on the right bottom corner the "**IP Address**" of the connected Access Point.

File menu

The "File menu" contains the following enabled submenus.



Close Connection AP

Terminates the connection with the Access Point. You can find and associate with another access point by selecting the "**Find Access Point**" after close the connection.

Download changes

When all the desired values of the parameters have been set you are able to download the changes (save the changes) to the Access Point by selecting this submenu.

Refresh

After changing the access point setting, you can update your current display by clicking the "**Fresh**" function.

Options

Defines the polling interval according to which the SNMP Manager polls the Access Point in order to update the statistics and the Associated Stations List.

Op	tions	×
	Polling Interval	
	A contract of the second	
	0 seconds	
	OK Cancel	

Setup menu

As soon as the connection has been established, you are able to start viewing or setting the Access Point parameters. Under the "**Setup**" menu, there are the following submenus.

🔊 Access Point SNMP Manager	- Bridge IP Configuration	
<u>File Setup</u> Commands Info Iraps		
File Setup Commands Info Iraps Bridge ▶ I		
	OK Cancel	102 100 0 1
Get Configuration done		192.168.0.1

Bridge

Under the "Bridge" submenu, there are two options:

— IP configuration

By choosing this option the window of appears.

If DHCP client is not enabled, "IP Address" and "IP Mask" can be modified

through "**IP Configuration**". If DHCP client is enabled the IP Address field displays IP Address that was dynamically assigned to the AP by the network DHCP server and the IP Mask field displays IP Mask utilized by the network DHCP server. Additional you have to select the Primary Port which is the interface that determines the DHCP server. If changes are made, you need to "**Download Changes**" under the "**File**" menu in order to save them.

Bridge IP Configuration Parameters

MAC Address: Unique 48-bit, hard-coded Media Access Control address known as the station identifier.

IP address: Network-assigned Internet Protocol address of the Access Point.

IP Mask: Four sets of three digits that divides a network into subnet works.

— Filtering

If the IP Routing is enabled only the IP protocol packets will pass through the WLAN and any other protocol filtered out.

8 ⁸ /	Access	Point SNMI	P Man	ager -	Filtering	Configur	ation	- 🗆 🗵
<u>F</u> ile	<u>S</u> etup	<u>C</u> ommands	<u>I</u> nfo	<u>T</u> raps	Network	<u>W</u> indow	<u>H</u> elp	
	<u>B</u> ric		•		[,] Configural	ion		
	<u> </u>	eless LAN	•	<u> </u>	Itering			
		able SNMP Tr	aps					
	Aut	horization					Filtering Configuration	
							OK Cancel	
Get	Config	uration do	ne				192.168.0.1	///

Wireless LAN

Under this submenu there are the following three options available.

- Privacy options

By choosing this option you must define the encryption key values of your choice. There are four 5 Hex digit encryption keys available if you select 64 bit WEP or there are four 13 Hex digit encryption keys available if you select 128 bit WEP. The key is enabled only if you select it in the "**Default key**" option. Enable the WEP (Wired Equivalent Privacy) option in order to activate WEP encryption for transmissions between the stations and the Access Point. WEP is an authentication algorithm, which protects authorized Wireless LAN users against eavesdropping.

For the 64-bit encryption, each key is required to enter 5 Hex digits. For example: 11 22 33 44 55 66. The 128-bit encryption requires each key to enter 13 Hex digits. For example: 12 34 56 78 9A BC DE F0 11 22 33 44 55.

8 [®] 4	Access	Point SNM	P Man	ager -	Privacy	Options				
<u>F</u> ile	<u>S</u> etup	<u>C</u> ommands	<u>I</u> nfo	<u>T</u> raps	Network	<u>W</u> indow	<u>H</u> elp			
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Get	Privac	y Configu	ration	done	•					192.168.0.1

There are four 5 Hex digit encryption keys available if you select 64 bit WEP.

Note: The Authentication type must be the same on the wireless station and on the access point. All shared keys on the wireless station must be the same as those on the access point with which the client station is associated.

There are four 13 Hex	digit operation kove	available if you e	alact 128 hit M/ED
	uigit enci yption keys	avaliable il you si	

89 A	Access	Point SNM	P Man	ager -	Privacy	Options				
File	<u>S</u> etup	<u>C</u> ommands	<u>I</u> nfo	<u>T</u> raps	Network	<u>W</u> indow	<u>H</u> elp			
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							🔖 Privacy O	ptions		<u> </u>
							Key 1	11 11 11 11 11 11 11 11 11 11	11 11 11 11	
							Key 2	22 22 22 22 22 22 22 22 22 22 22	22 22 22 22	
							Key 3	33 33 33 33 33 33 33 33 33 33	33 33 33 33	
							Key 4	44 44 44 44 44 44 44 44 44	44 44 44 44	
							Default key	Key 1 💌		
							WEP		_	
							O Ena	able 64 💿 Enable 128	O Disable	
							Set		Close	
						<u> -</u>				-
Get	Priva	y Configu	ration	done						192.168.0.1

Or you can select **Disable**.

8 ³³	Access	Point SNM	P Mar	nager -	Privacy	Options						- 🗆 ×
Eile	<u>S</u> etup	<u>C</u> ommands	<u>I</u> nfo	<u>T</u> raps	Network	<u>W</u> indow	<u>H</u> elp					
							🔖 Privacy O	ptions			<u> </u>	
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							Key 2					
							Key 3					
							Key 4					
										_		
							Default key		8			
							WEP-	None Key 1	nable 128	Disable		
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						_					_	
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Get	Privac	y Configu	ation	done	•						192.168.0.1	

— Operational Settings

Using this option you can either view or modify the Wireless LAN parameters of the Access Point. These parameters are described below:

💖 Access Point SNMP Manager - WireLess Operational Sett	ings
<u>File Setup Commands Info Traps Network Window H</u> elp	
**	WireLess Operational Settings Access Point Name NONE ESSID default SSID Broadcasting Channel Channel 1 Regulatory Domain Fragmentation Threshold 2346 Rates (Mbps) RTS Threshold 2346 Supported Basic C Left C Left Sight © Liversity © Diversity © Diversity Preamble Type Preamble Type
	C Short Preamble C Long Preamble Advanced
Get Privacy Configuration done.	192.168.0.1

- *ESSID:* It is an ASCII string up to 32 characters used to identify a WLAN that prevents the unintentional merging of two co-located WLANs. The ESSID value must be the same in all stations and Access Point in the extended WLAN. Select the ESSID to be used.
- *Channel:* There are 14 channels available. The channels differ from country to country. Select the channel to be used.
- *Fragmentation threshold:* The size at which packets will be fragmented. Choose a setting within a range of 256 to 2346 bytes.
- *RTS Threshold:* Minimum packet size to require an RTS (Request To Send). For packets smaller than this threshold, an RTS is not sent and the packet is transmitted directly to the WLAN. This is the option for the RTS Threshold activation.
- Preamble Type (Short/Long): Preamble is the first sub field of PPDU, which is the appropriate frame format for transmission to PHY (Physical layer). There are two options, Short Preamble and Long Preamble. The Short Preamble option improves throughput performance.

- *Rata:* By default the unit adoptively selects the highest possible rate for transmission. Select the basic rates to be used among the following options 1-2-5.5-11(Mbps),
- Auto Rate Fall Back: When this is enabled the transmission rate is the optimum rate. In case of obstacles or interference, the system will automatically fall back.
- *Regulatory Domain:* The value of this field is already set and can not be modified.

If you press the "**Advanced**" button there are the following three operational modes available.

🔖 WireLess Operati	onal Settings								
Access Point Name	NONE								
ESSID default		SSID Broadcasting 🔽							
Channel Ch	annel 1 💌 Reg	gulatory Domain ETSI							
Fragmentation Thresh	old 2346	Rates (Mbps)							
RTS Threshold	2346	Supported Basic							
- Rx Antenna	Tx Antenna								
C Left	C Left	5.5 🔽 🔽							
C Right	C Right	11 🔽 🗹							
Diversity	Oiversity	Auto Rate							
Pream	ble Type	Fall Back							
C Short Preamble	 Long Preamble 	Advanced							
0		···· /							
	Operational								
	O Acc	cess Point							
	C Acc	cess Point Client							
	i	Site Survey							
C Wireless Bridge Remote MAC									
© Point to Point									
	c	Devint to MultiPoint							
		OK Cancel							
	i								

Access Point

This mode provides two-way access between wireless stations and wired LANs. Wireless stations within the range of the Access Point device may communicate with each other via the Access Point.

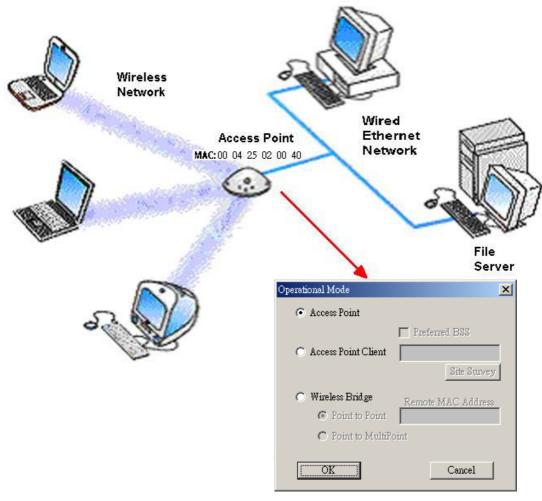


Figure 3-1 Access Point

Access point client

This mode allows the connection of one or more remote LANs with a central LAN, creating thus an extended single virtual LAN. In this way, any station of the Remote LAN can successfully communicate with any station of the central LAN, as if all of them belonged to the same physical LAN. Wireless Stations cannot communicate directly with Access Point Clients. The Access Point conducts the designated traffic to the appropriate wired or wireless station.

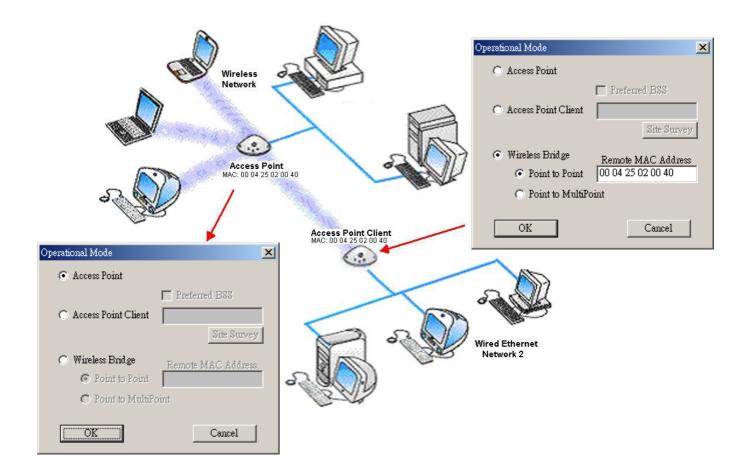


Figure 3-2 Access Point Client

Wireless bridge

This mode allows two types of connections:

a. Point to point

The Wireless Bridge can communicate with a specific Remote MAC Address. The user must define the **Remote MAC Address**, which is the MAC Address of the Wireless Bridge of the Remote LAN.

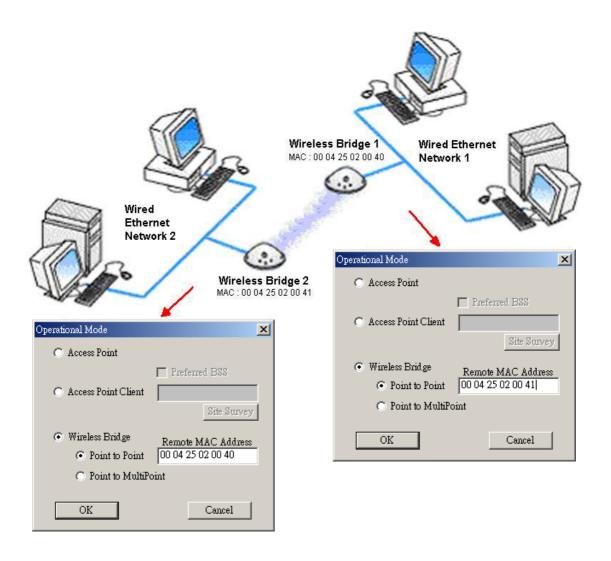
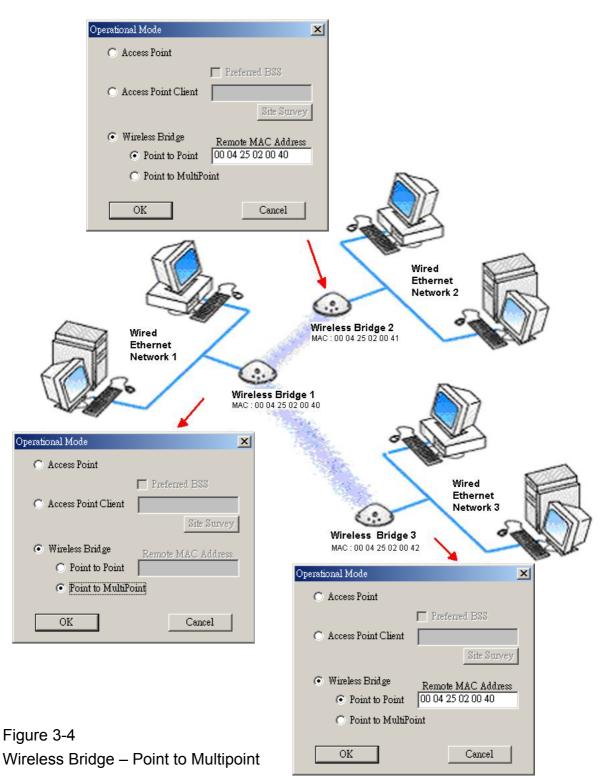


Figure 3-3 Wireless Bridge – Point to Point

b. Point to multipoint

The Wireless Bridge can communicate with any Wireless Bridge available in the same channel. When Authorization Algorithm is enabled, the Wireless Bridge can communicate with any Wireless Bridge whose MAC Addresses exists in the Authorization Table.



For each mode you can either view or modify the Wireless LAN parameters of the Wireless Operational Settings windows. In the **Operational Mode** Window there are the following parameters.

Preferred BSS

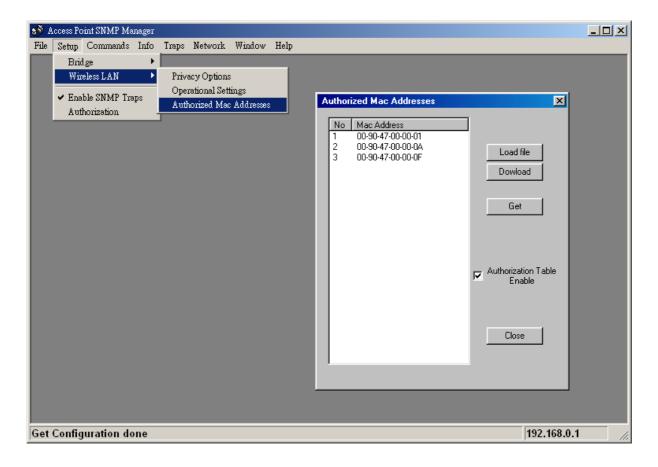
It is enabled only if you select the Access Point Client option. BSS corresponds to the MAC Address of the desired AP.

Remote MAC address

It is enabled only if you select Point to Point. It corresponds to the MAC Address of the Wireless Bridge of the Remote LAN.

-Authorized MAC address

For security reasons the Access Point has the ability to associate with authorized MAC Addresses stations, if the Authorization Table option is enabled. Thus, under the Authorized MAC Address option you may press the following buttons.

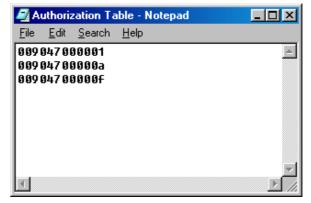


The "**Load file**" button in order to load a file with the MAC addresses that can be associated with the Access Point (Authorized MAC Addresses).

The "**Download**" button in order to download the Authorized MAC Address to the Access Point.

The "**Get**" button in order to get from the Access Point the Authorized MAC Addresses.

Authorization Table example: Use Notepad to create Authorization Table file



Enable SNMP Traps

Using this submenu you can either enable or disable SNMP traps, which are messages displayed in the right bottom corner for the main window indicating that an action related to the AP took place. Permitted messages are :

Trap Reassociation: This trap message is sent when a Station's reassociation request is received from the AP.

Trap Association: Indicates the reception of an association request packet and the sender Station's successful association with the Wireless AP.

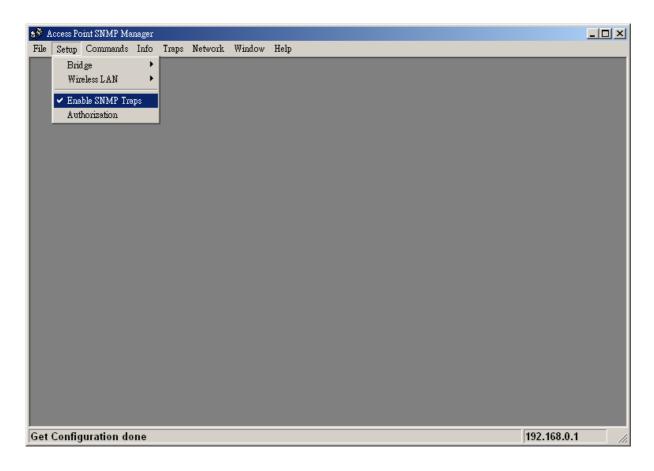
Trap Disassociation: This trap message is sent when a disassociation notification packet is received from a Station.

Trap Reset: This trap message is sent when the AP resets.

Trap Setting IP Address with Ping: This trap message is sent when the Wireless AP IP address is set with the transmission of a ping message.

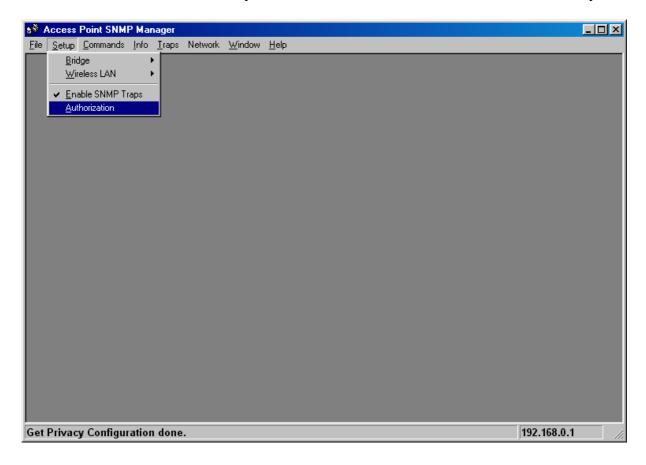
Trap Start Up: This trap message is sent when Wireless AP starts up.

Trap Failed to Erase Flash: This trap message is sent when Wireless AP fails to erase flash.



Authorization

Using this submenu the Administrator can change the passwords which referred to the community field for the User and the Administrator Authority.



Authority configuration	Auth
Administrator Community	<u>o</u> .
New Community ***** Confirm Community *****	N
C User Community	·
New Community	N
Confirm Community	C
Apply Cancel	

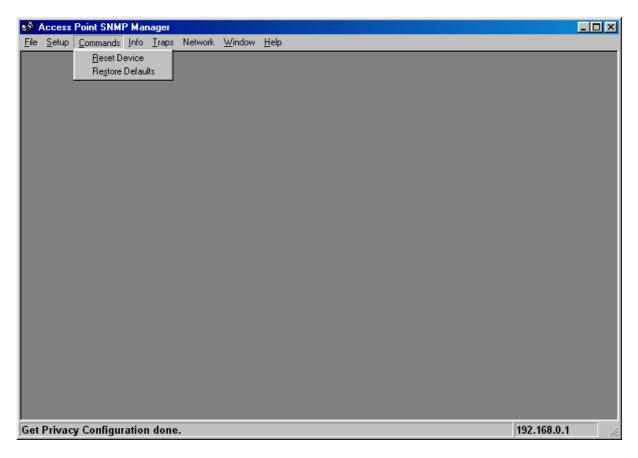
Authority configuration									
C Administrator Community									
New Community									
Confirm Community									
User Community									
New Community	*****								
Confirm Community	*****								
<u> </u>									
Apply	Cancel								

Commands menu

Under this menu there are two submenus.

Reset Device: you can reset the Access Point. This action takes place after a user makes configuration changes in order to initiate the changes.

Restore Default: You can restore the factory default values of the Access Point.



Info menu

Using this menu you can view a limited number of statistics by choosing the "SNMP-Short View" of the "Change Mode" Software. There are the following submenu:

<u>Wireless Statistics</u>: This submenu reports the statistics concerning the unit's Wireless activity.

🔊 Access Point SNMP Manager - WireLess Statistic	\$	_ 🗆 🗙
<u>File Setup Commands Info Traps Network Window</u>	<u>H</u> elp	
Wireless Statistics		
<u>Ethernet Statistics</u>		
🔖 WireLess Statistics		×
		_
Unicast Transmitted Packets	0 Unicast Received Packets 0	
Broadcast Transmitted Packets	211 Broadcast Received Packets 0	
Multicast Transmitted Packets	119 Multicast Received Packets 0	
	OK	
		100 100 0 1
Get Privacy Configuration done.		192.168.0.1 //

The meaning of the fields, concerning all the statistics, is given in the following.

- Unicast Transmitted Packets: The number of unicast packets successfully transmitted.
- Broadcast transmitted packets: The number of broadcast packets transmitted.
- *Multicast transmitted packets*: The number of multicast packets transmitted.
- Unicast Received Packets: The number of unicast packets that were successfully received.
- *Broadcast Received*: The number of broadcast packets that were successfully received.
- *Multicast Received*: The number of multicast packets that were successfully received.

<u>Ethernet Wireless Statistics</u>: This submenu reports the statistics concerning the unit's Ethernet port activity. The meaning of the fields, concerning all the statistics is given in the following.

S Access Point SNMP Manager - Ethernet Statistics	- 🗆 ×
File Setup Commands Info Iraps Network Window Help	
Wireless Statistics Ethernet Statistics	
🔪 Ethernet Statistics	
Received Packets Transmitted Packets	
Total Bytes 51302 Total Bytes 4267	
Total Packets 390 Total Packets 32	
Packet CRC Errors 0 Packet CRC Errors 0	
ОК	
Get Privacy Configuration done. 192.168.0.	1 //.

Received Packets:

Total Bytes: The number of bytes in the frames that were received.

Total Packs: Total number of received packets.

Packet CRC Errors: The number of packets with CRC Errors.

Transmitted Packets:

Total Bytes: The number of bytes in the frames that were transmitted.

Total Packs: Total number of received transmitted.

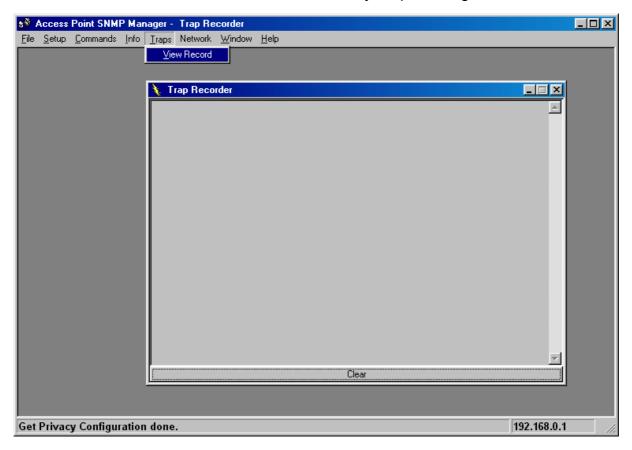
Packet CRC Errors: The number of packets with CRC Errors.

Traps menu

Provides information for trap messages

View Record

You can see additional information for every Trap Message.



Network menu

Provides information about the Network. Under this menu there is only the Associate Station submenu.

Associated stations

Using this submenu you can view the MAC Addresses of the Associated stations with the Access Point.

8 [®] A	ccess	Point SNM	P Man	ager -	Associated Statio	าร				- D ×
<u>F</u> ile	<u>S</u> etup	<u>C</u> ommands	<u>I</u> nfo	<u>T</u> raps	Network Window					
					Associated Statio	ns				
					Associated Statio					
					Associated Statio	ns I				
					Mac Address					
							- 11			
							- 11			
							- 11			
							- 11			
							- 11			
							- 11			
							- 11			
							- 11			
							- 11			
							- 11			
							- 11			
					10)				
				<u> </u>		_				
Get	Privac	y Configu	ration	done	•				192.168.0.1	///

Window menu

Under this menu there are the following submenus

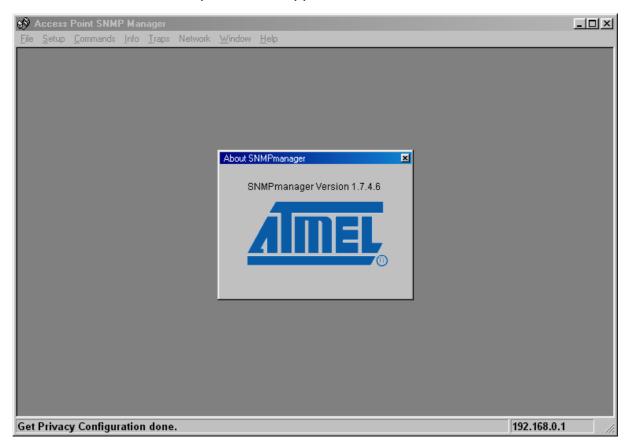
Cascade: All opened windows are arranged on the desktop in a cascade fashion.

<u>Tile</u>

All open windows are visible on the desktop.

Help menu

Provides on line help about the application.



4. Installation under Windows XP

This section describes the procedures for installing the Wireless LAN Access Point under Windows XP operating system.

Before You Start

Before setting up your Access Point, ask your network system administrator for the following information:

- Your IP address, gateway address, and subnet mask if you're not using a DHCP server.
- The MAC address from the label on the bottom of the Access Point.
- Your Wireless Client Name
- Your Wireless SSID
- Your computer's unique client name and workgroup name
- For your network account, your user name and password.

Every computer on a network is identified by a unique network address. There are two methods of assigning network addresses to computer on a TCP/IP network:

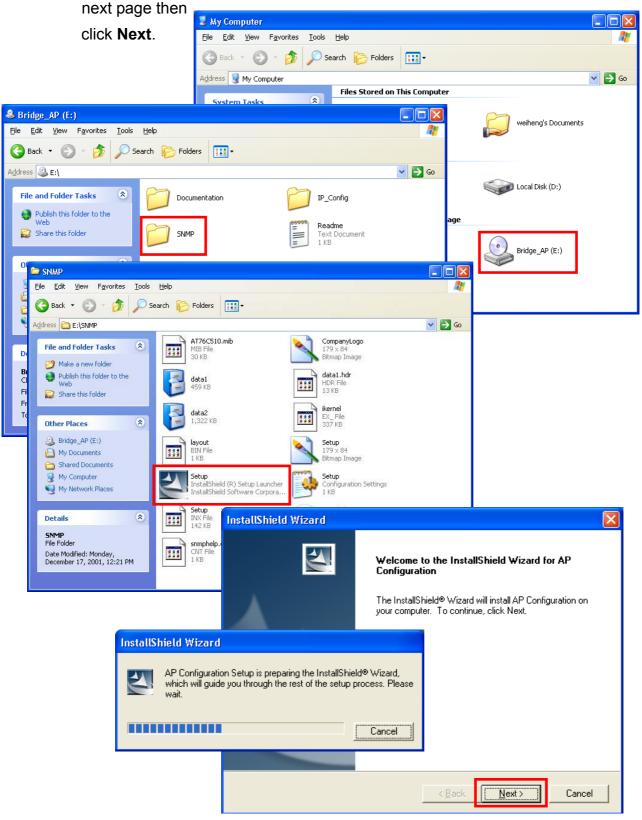
- Static IP addressing
- Dynamic IP addressing (DHCP)

In networks with **static IP addressing**, the network administrator manually assigns an IP address to each computer. Once a static IP address is assigned, a computer uses the same IP address every time it reboots and logs on to the network. You may manually change the IP address in the **Network Properties dialog box**. Networks using static IP addresses are easy to set up and do not require additional network management software.

In networks with **dynamic IP addressing**, a DHCP server in the network dynamically assigns IP addresses to all clients every time they log on to the network. Network using dynamic IP addresses require setting up and running a DHCP Server or installing the Wingate software package.

4.1 Install the SNMP Manager application

Step 1. Insert the given Documentation CD and then click "start" menu select MY Computer then click. In my computer window, double click the Bridge_AP CD Drive icon. Choose SNMP folder and then double click Setup to install "SNMP Manager". It opens the InstallShield Wizard dialog box as shown



Step 2. Software License Agreement, click Yes to accept.

InstallShield Wizard 🛛 🔀
License Agreement Please read the following license agreement carefully.
Press the PAGE DOWN key to see the rest of the agreement.
License Agreement for Atmel Wireless LAN Kit This is a legal agreement between Atmel Corporation ("Atmel") and you, the end user. If you do not agree with the terms of this Agreement, promptly return the unopened diskette package and the accompanying items to Atmel for a full refund. In return for acquiring a license to use the Wireless LAN software, related documentation and hardware peripherals ("Software"), you agree to the following terms and conditions.
Section 1. Grant of License. Atmel grants you a limited,
Do you accept all the terms of the preceding License Agreement? If you choose No, the setup will close. To install AP Configuration, you must accept this agreement.
< <u>B</u> ack <u>Y</u> es <u>N</u> o

Step 3. Click **Next** to install to this folder.

Insta	allShield Wizard 🛛 🛛 🔀
	ose Destination Location Select folder where Setup will install files.
s	Setup will install AP Configuration in the following folder.
	o install to this folder, click Next. To install to a different folder, click Browse and select nother folder.
Г	Destination Folder
	C:\Program Files\WLAN Utilities\AP Configuration Browse
[install	Shield <u>A Back</u> Cancel

Step 4. Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the Existing Folders list. Click **Next** to continue.

InstallShield Wizard	×
Select Program Folder Please select a program folder.	
Setup will add program icons to the Program Folder listed below. You may type a new folder name, or select one from the existing folders list. Click Next to continue. Program Folders:	
Wireless LAN Utilities VAP Configuration Existing Folders: Accessories Administrative Tools Atmel Utilities Games Startup Wireless LAN Utilities	
InstallShield <u>Rext > Cancel</u>	

Step 5. Review settings before copying files, click **Next** to start copying files.

InstallShield Wizard	×			
Start Copying Files Review settings before copying files.				
Setup has enough information to start copying the program files. If you want to review or change any settings, click Back. If you are satisfied with the settings, click Next to begin copying files.				
Current Settings:				
The chosen destination path is: C:\Program Files\WLAN Utilities\AP Configuration				
The (one and only) type of setup is: Compact				
The selected program Folder is: Wireless LAN Utilities\AP Configuration				
The supported Operating Systems are: Windows 98 Windows Me Windows 2000				
InstallShield				
< <u>Back</u> Cancel				

Step 6. Start copying files.

InstallShield Wizard	×
Setup Status	N2
AP Configuration Setup is performing the requested operations.	
Installing:	
C:\Program Files\WLAN Utilities\AP Configuration\snmphelp.hlp	
30%	
InstallShield	
	Cancel

Step 7. Click Finish to complete Setup.

InstallShield Wizard	
	InstallShield Wizard Complete The InstallShield Wizard has successfully installed AP Configuration. Before you can use the program, you must restart your computer. (Yes, I want to restart my computer now.) (No, I will restart my computer later. Remove any disks from their drives, and then click Finish to complete setup.
	< <u>B</u> ack Finish Cancel

4.2 Setting the IP Address

Each station or device on your network must have a unique IP address. Following these steps to setting the IP address:

- Step 1. Connect an Ethernet station and the Access Point on the same subnet. The simplest way to accomplish is to connect the Access Point and the Ethernet station to the same hub. You need to check if the station IP address and the Sub-net mask are configured properly. Also the new IP address for the Access Point must correspond to the Subnet mask.
- Step 2. In my **computer window**, double click the **Bridge_AP CD Drive** icon. Choose **IP_Config** folder and then double click **IPConfig** to execute. Then **IPConfig screen displays** as shown.

Stridge_AP (E:)	
<u>File Edit View Favorites Iools H</u> elp	1
Search 😨 - 🎓 Search 🎓 Folders	
Address 🕝 E:\	🔁 Go
File and Folder Tasks Occumentation IP_Config Publish this folder to the Web Web Readme	
Eile Edit View Favorites Iools Help	
🚱 Back 🔹 🕥 🕤 🏂 Search 🔊 Folders 🛄 -	
Address 🔂 E:\IP_Config	
File and Folder Tasks IPConfig Make a new folder IPConfig Publish this folder to the Web IPConfig Share this folder IPConfig	
Other Places	
Bridge_AP (E:) My Documents Shared Documents My Computer My Network Places Details P_Config File Folder Date Modified: Monday, December 17, 2001, 12:21 PM Config IP Config IP	
Clear All 🗸 OK X Cancel	

Step 3. Type the **"Access Point MAC Address"** from the label on the bottom of the Access Point, type the **"Config IP"** address from your system administrator, and then click **"OK"**.

🚱 Access Point IP Configura 🔳 🗖 🔀				
Access Point MAC Address				
Config IP				
Clear All 🗸 OK 🗙 Cancel				

Step 4. Open a MS-DOS Prompt window and type **ping** followed by the IP address used in the **IP Config**. The IP address is assigned to the Access Point. The Access Point's replies to the **ping** confirm that the IP address was assigned correctly.

🔤 Command Prompt	- 🗆 🗙
Microsoft Windows XP [Version 5.1.2600] (C) Copyright 1985-2001 Microsoft Corp.	_
C:\>ping 192.168.0.1	
Pinging 192.168.0.1 with 32 bytes of data:	
Reply from 192.168.0.1: bytes=32 time=1ms TTL=64 Reply from 192.168.0.1: bytes=32 time<1ms TTL=64 Reply from 192.168.0.1: bytes=32 time<1ms TTL=64 Reply from 192.168.0.1: bytes=32 time<1ms TTL=64	
Ping statistics for 192.168.0.1: Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds: Minimum = Oms, Maximum = 1ms, Average = Oms	
C:∖>	
	-

Step 5. If you get a ping reply, then the IP address has been temporarily set. In order to set it permanently you need to run SNMP Manager without powering off the Access Point.

4.3 Using the SNMP Manager

Click "start" menu select Wireless LAN Utilities \rightarrow AP Configuration \rightarrow AP Configuration then click.



💖 Access Point SNMP Manager	
<u>File</u> <u>H</u> elp	
Manager opened successfully	
	111

File menu

When the application opens, under the **File** Menu there are the following submenus:

Connect to AP

Using this submenu you can directly connect with the Access Point by typing its IP Address in the panel which appears and at the Community field, type the appropriate password (The default password is "**public**"). Additionally you have to select the **User** or **Administrator Authority** in the Authority combo-box. **User Authority** allow you only to view and not to set or save changes to the Access Point Configuration, while **Administrator Authority** allow you to either view or set changes to the Access Point Configuration. Then press **OK**.

🔊 Access Point SNMP Manager		
File Help		
Connect to Access Point Ctrl+C Find Access Point Ctrl+F Close Connection AP Ctrl+L Exit		
	Connect to Access Point	
	IP Address 192.168.0.1 Community ****** Authority User	
Connect to Acc	ess Point Cancel	
IP Address Community Authority OK	192.168.0.1	
	Connect to Access Point	
	IP Address 192.168.0.1 Community	
Manager opened successfully		11.
	OK Cancel	
	SNMPmanager SNMPmanager SNMPmanager	

In case of a successful connection to the Access Point, the following window appears press "**OK**"

If your network has a DHCP server IP Address can be automatically assigned to the Access Point.

Find Access Point

This submenu allows you to find and connect with an Access Point without the necessity of knowing its IP Address. Choose this submenu in order to find the Access Points available for connection. Select one of the available Access Points and press "**Connect**", then appears indicating the IP Address of the selected Access Point and prompting you to select Authority and to write the appropriate password at the community field. Then press "**OK**".

💖 Access Point SNMP Manager					
File Help					
Connect to Access Point Ctrl+C		A	teste.		ก
Find Access Point Ctrl+F Close Connection AP Ctrl+L		Available Access Poi	ints	<u></u>	2
		Name 802.11 AP (Ver. 1.4h.3)	NONE	IP Address 192.168.0.1	
Exit	_			132.100.0.1	
Connect to Ar	ccess P	oint 🔰			
ID Address	4.01	2.168.0.1			
IP Address	_				
Community	****	***			
Authority	Use	er 💌			
Connect to Access Point	_				
		Cancel			
IP Address 192.168.0.1		,			
		Connec	t Car	ncel	
Community ++++++					
Authority User 🗨					
OK Administrator					
	Defea				
Connect to Access	Point				
IP Address	92.168.	0.1			

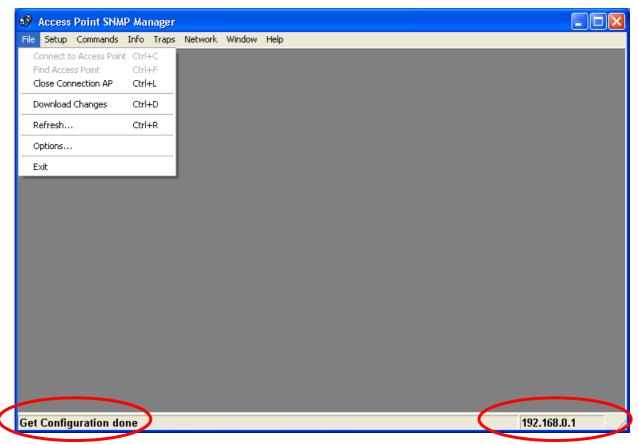
Manager opened successfully Community *	*****				
Authority A	dministr	rator 🗾 👻			
ОК		Canaal			
	_	Cancel			
	-	SNMPmanager			
		(1) 802.11 AP (Ver.	1.45.3) NONE		
		802.11 AP (Ver. found	. I. HI. SY NONE		
		OK			
		L			

In case of a successful connection to the Access Point, the following window appears press "**OK**"

When the connection has been successfully established, you get a message in the left bottom corner indicating, "**Get Configuration done**" and on the right bottom corner the "**IP Address**" of the connected Access Point.

File menu

The "File menu" contains the following enabled submenus.



Close Connection AP

Terminates the connection with the Access Point. You can find and associate with another access point by selecting the "**Find Access Point**" after close the connection.

Download changes

When all the desired values of the parameters have been set you are able to download the changes (save the changes) to the Access Point by selecting this submenu.

Refresh

After changing the access point setting, you can update your current display by clicking the "**Fresh**" function.

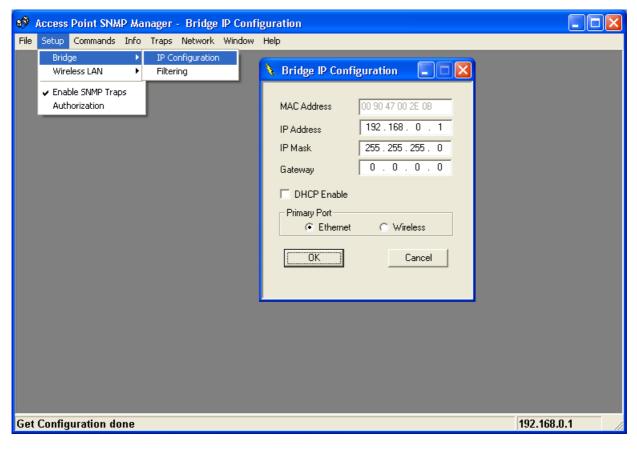
Options

Defines the polling interval according to which the SNMP Manager polls the Access Point in order to update the statistics and the Associated Stations List.

Polling Interval				
0 seconds				
OK Cancel				

Setup menu

As soon as the connection has been established, you are able to start viewing or setting the Access Point parameters. Under the "**Setup**" menu, there are the following submenus.



Bridge

Under the "Bridge" submenu, there are two options:

— IP configuration

By choosing this option the window of appears.

If DHCP client is not enabled, "IP Address" and "IP Mask" can be modified

through "**IP Configuration**". If DHCP client is enabled the IP Address field displays IP Address that was dynamically assigned to the AP by the network DHCP server and the IP Mask field displays IP Mask utilized by the network DHCP server. Additional you have to select the Primary Port which is the interface that determines the DHCP server. If changes are made, you need to "**Download Changes**" under the "**File**" menu in order to save them.

Bridge IP Configuration Parameters

MAC Address: Unique 48-bit, hard-coded Media Access Control address known as the station identifier.

IP address: Network-assigned Internet Protocol address of the Access Point.

IP Mask: Four sets of three digits that divides a network into subnet works.

— Filtering

If the IP Routing is enabled only the IP protocol packets will pass through the WLAN and any other protocol filtered out.

Wireless LAN

Under this submenu there are the following three options available.

- Privacy options

By choosing this option you must define the encryption key values of your choice. There are four 5 Hex digit encryption keys available if you select 64 bit WEP or there are four 13 Hex digit encryption keys available if you select 128 bit WEP. The key is enabled only if you select it in the "**Default key**" option. Enable the WEP (Wired Equivalent Privacy) option in order to activate WEP encryption for transmissions between the stations and the Access Point. WEP is an authentication algorithm, which protects authorized Wireless LAN users against eavesdropping.

For the 64-bit encryption, each key is required to enter 5 Hex digits. For example: 11 22 33 44 55 66. The 128-bit encryption requires each key to enter 13 Hex digits. For example: 12 34 56 78 9A BC DE F0 11 22 33 44 55.

8 9 A	ccess Point SNMP Ma	nager - Privacy Options		
File	Setup Commands Info	Traps Network Window Help		
	Bridge 🕨 🕨			
	Wireless LAN 🔹 🕨	Privacy Options	Y Privacy Options	
	 Enable SNMP Traps Authorization 	Operational Settings Authorized Mac Addresses	Key 1 11 11 11 11	
		,	Key 2 22 22 22 22 22	
			Key 3 33 33 33 33	
			Key 4 44 44 44 44	
			Default key Key 1 💌	
			Enable 64 C Enable 128 C Disable	
			Close	
Get F	Privacy Configuration	done.	192.168.0.1 2 < Trap Rece	ived>

There are four 5 Hex digit encryption keys available if you select 64 bit WEP.

Note: The Authentication type must be the same on the wireless station and on the access point. All shared keys on the wireless station must be the same as those on the access point with which the client station is associated.

😵 Access Point SNMP Manager - Privacy Options		
File Setup Commands Info Traps Network Window Help		
Bridge		
Wireless LAN Privacy Options Enable SNMP Traps Authorization Operational Settings Authorized Mac Addresses 	Privacy Options Image: Constraint of the second	
Get Privacy Configuration done.	192.168.0.1 4 <trap rev<="" th=""><th>ceived></th></trap>	ceived>

There are four 13 Hex digit encryption keys available if you select 128 bit WEP.

Or you can select **Disable**.

💖 Access Point SNMP Manager - Privacy Options		
<u>File S</u> etup Commands Info Iraps Network <u>W</u> indow <u>H</u> elp		
	Privacy Options	
	Key 1 11 11 11 11 11 11 11 11 11 11 11 11	
	Key 2 22 22 22 22 22 22 22 22 22 22 22 22	
	Key 3 33 33 33 33 33 33 33 33 33 33 33 33	
	Key 4 44 44 44 44 44 44 44 44 44 44 44 44	
	Default key None 💌	
	WEP Key 1 C Ena Key 2 nable 128 C Disable	
	WEP C Ena Key 2 Key 3 Key 4 Ney 4	
	Set Close	
Get Privacy Configuration done.	192.168.0.1 4 <trap receiv<="" th=""><th>red></th></trap>	red>

— Operational Settings

Using this option you can either view or modify the Wireless LAN parameters of the Access Point. These parameters are described below:

🛷 Access Point SNMP Manager - WireLess Operational Settings				
File Setup Commands Info Traps Network Window Help				
File Setup Commands Info Traps Network Window Help Bridge Wireless LAN Privacy Options Operational Settings Authorized Mac Addresses Authorization SSID Broadcasting Channel Channel 1 Regulatory Domain ETSI Fragmentation Threshold 2346 Rates (Mbps) Supported Basic Wireless (Mac Addresses) C Left C Left C Right C Diversity C Diversity<!--</th-->				
C Diversity Auto Rate Fall Back Preamble For Diversity C Short Preamble Advanced OK Cancel				
Get Privacy Configuration done. 192.168.0.1 4 < Trap Received> 🥢				

- *ESSID:* It is an ASCII string up to 32 characters used to identify a WLAN that prevents the unintentional merging of two co-located WLANs. The ESSID value must be the same in all stations and Access Point in the extended WLAN. Select the ESSID to be used.
- *Channel:* There are 14 channels available. The channels differ from country to country. Select the channel to be used.
- *Fragmentation threshold:* The size at which packets will be fragmented. Choose a setting within a range of 256 to 2346 bytes.
- *RTS Threshold:* Minimum packet size to require an RTS (Request To Send). For packets smaller than this threshold, an RTS is not sent and the packet is transmitted directly to the WLAN. This is the option for the RTS Threshold activation.
- Preamble Type (Short/Long): Preamble is the first sub field of PPDU, which is the appropriate frame format for transmission to PHY (Physical layer). There are two options, Short Preamble and Long Preamble. The Short Preamble option improves throughput performance.

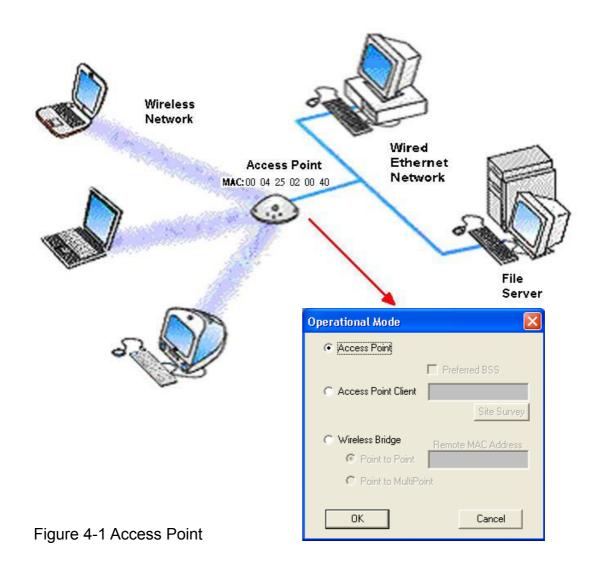
- *Rata:* By default the unit adoptively selects the highest possible rate for transmission. Select the basic rates to be used among the following options 1-2-5.5-11(Mbps),
- Auto Rate Fall Back: When this is enabled the transmission rate is the optimum rate. In case of obstacles or interference, the system will automatically fall back.
- *Regulatory Domain:* The value of this field is already set and can not be modified.

If you press the "**Advanced**" button there are the following three operational modes available.

🔖 WireLess Operational Set	tings 📃 🗖 🔀
Access Point Name NONE	
ESSID default	SSID Broadcasting 🔽
Channel Channel 1	Regulatory Domain ETSI
Fragmentation Threshold 2346	Rates (Mbps)
RTS Threshold 2346	Supported Basic
,	
C Left C Left	
C Right C Rig	
Diversity O	Auto Bate
Describle Trees	Fall Back
C Short Preamble C Long	Preamble
	Advanced
ОК	Operational Mode
	Access Point
	Preferred BSS
	C Access Point Client
	Site Survey
	C Wireless Bridge Remote MAC Address
	Point to Point
1	C Point to MultiPoint
1	
	OK Cancel
, , ,	54

Access Point

This mode provides two-way access between wireless stations and wired LANs. Wireless stations within the range of the Access Point device may communicate with each other via the Access Point.



Access point client

This mode allows the connection of one or more remote LANs with a central LAN, creating thus an extended single virtual LAN. In this way, any station of the Remote LAN can successfully communicate with any station of the central LAN, as if all of them belonged to the same physical LAN. Wireless Stations cannot communicate directly with Access Point Clients. The Access Point conducts the designated traffic to the appropriate wired or wireless station.

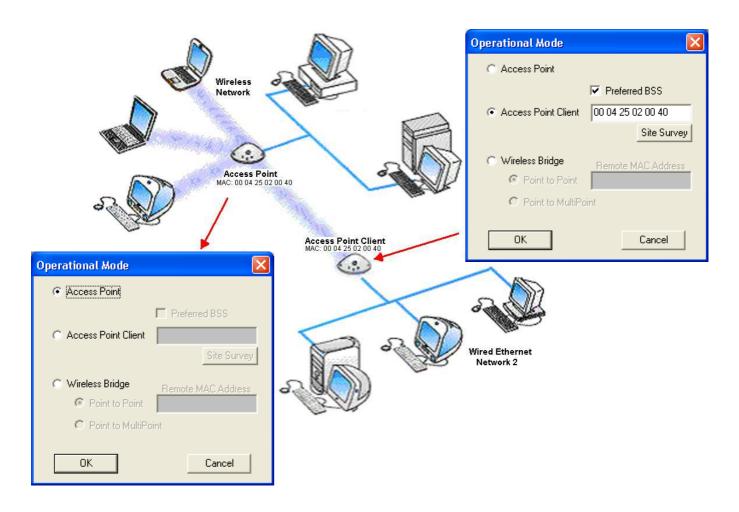


Figure 4-2 Access Point Client

Wireless bridge

This mode allows two types of connections:

a. Point to point

The Wireless Bridge can communicate with a specific Remote MAC Address. The user must define the **Remote MAC Address**, which is the MAC Address of the Wireless Bridge of the Remote LAN.

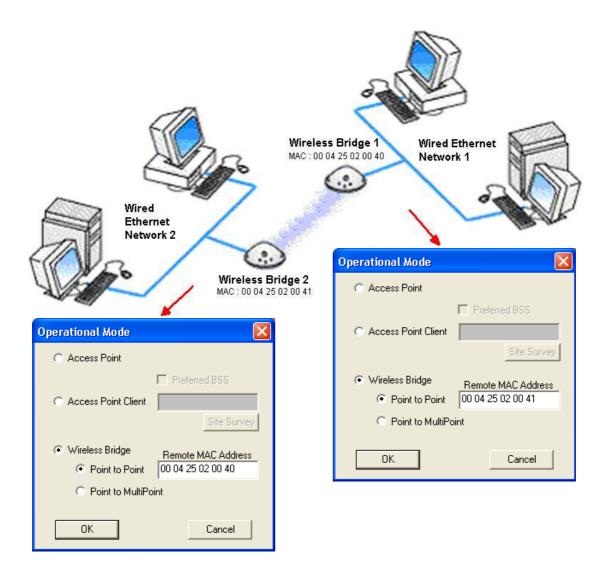
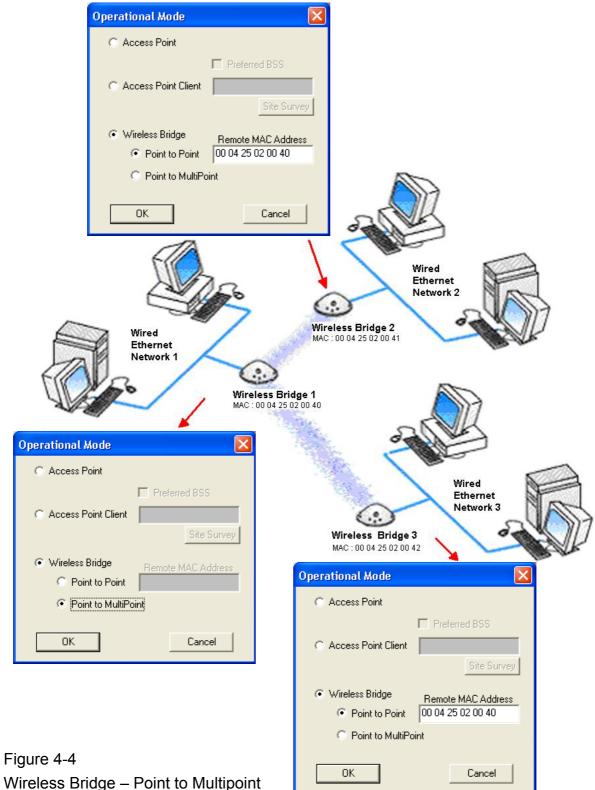


Figure 4-3 Wireless Bridge – Point to Point

b. Point to multipoint

The Wireless Bridge can communicate with any Wireless Bridge available in the same channel. When Authorization Algorithm is enabled, the Wireless Bridge can communicate with any Wireless Bridge whose MAC Addresses exists in the Authorization Table.



For each mode you can either view or modify the Wireless LAN parameters of the Wireless Operational Settings windows. In the **Operational Mode** Window there are the following parameters.

Preferred BSS

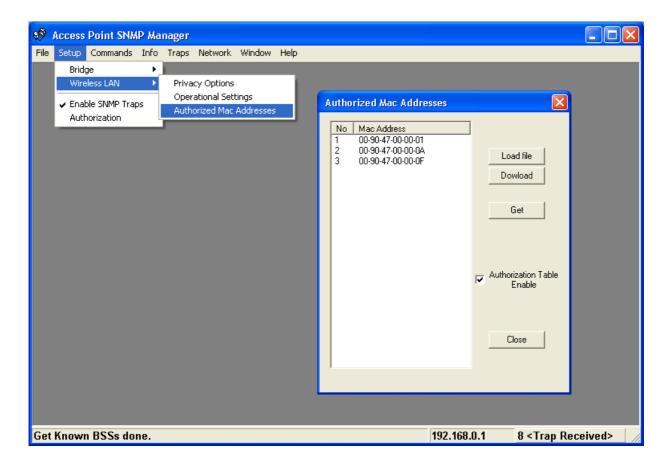
It is enabled only if you select the Access Point Client option. BSS corresponds to the MAC Address of the desired AP.

Remote MAC address

It is enabled only if you select Point to Point. It corresponds to the MAC Address of the Wireless Bridge of the Remote LAN.

-Authorized MAC address

For security reasons the Access Point has the ability to associate with authorized MAC Addresses stations, if the Authorization Table option is enabled. Thus, under the Authorized MAC Address option you may press the following buttons.

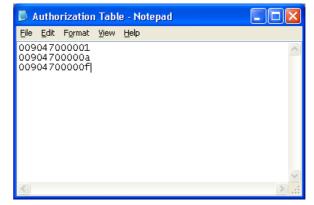


The "**Load file**" button in order to load a file with the MAC addresses that can be associated with the Access Point (Authorized MAC Addresses).

The "**Download**" button in order to download the Authorized MAC Address to the Access Point.

The "**Get**" button in order to get from the Access Point the Authorized MAC Addresses.

Authorization Table example: Use Notepad to create Authorization Table file



Enable SNMP Traps

Using this submenu you can either enable or disable SNMP traps, which are messages displayed in the right bottom corner for the main window indicating that an action related to the AP took place. Permitted messages are :

Trap Reassociation: This trap message is sent when a Station's reassociation request is received from the AP.

Trap Association: Indicates the reception of an association request packet and the sender Station's successful association with the Wireless AP.

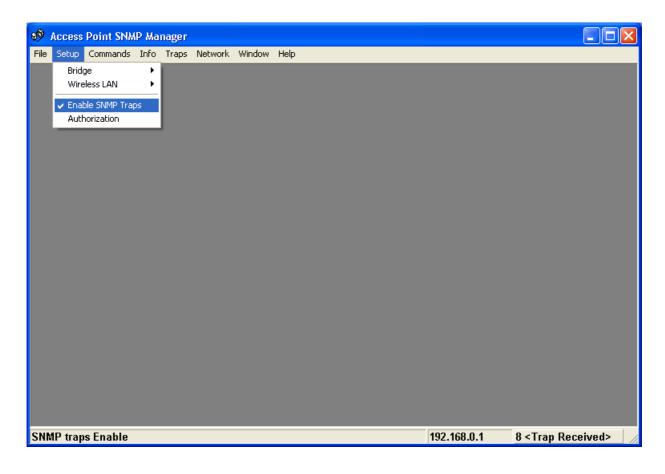
Trap Disassociation: This trap message is sent when a disassociation notification packet is received from a Station.

Trap Reset: This trap message is sent when the AP resets.

Trap Setting IP Address with Ping: This trap message is sent when the Wireless AP IP address is set with the transmission of a ping message.

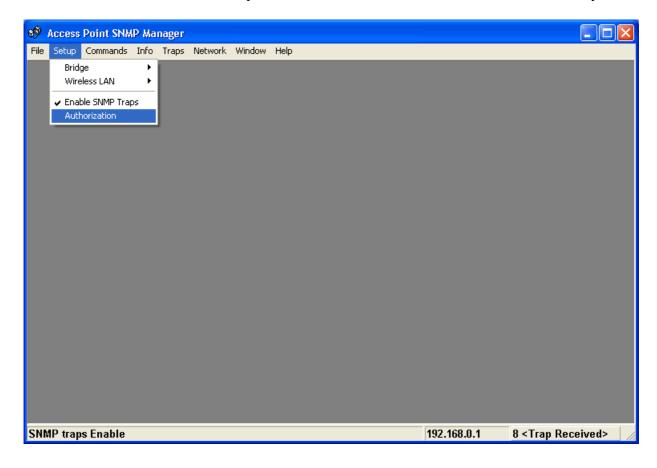
Trap Start Up: This trap message is sent when Wireless AP starts up.

Trap Failed to Erase Flash: This trap message is sent when Wireless AP fails to erase flash.



Authorization

Using this submenu the Administrator can change the passwords which referred to the community field for the User and the Administrator Authority.



Authority configuration				
Administrator Community				
New Community Confirm Community	××××× ×××××			
O User Community				
New Community Confirm Community				
Apply	Cancel			

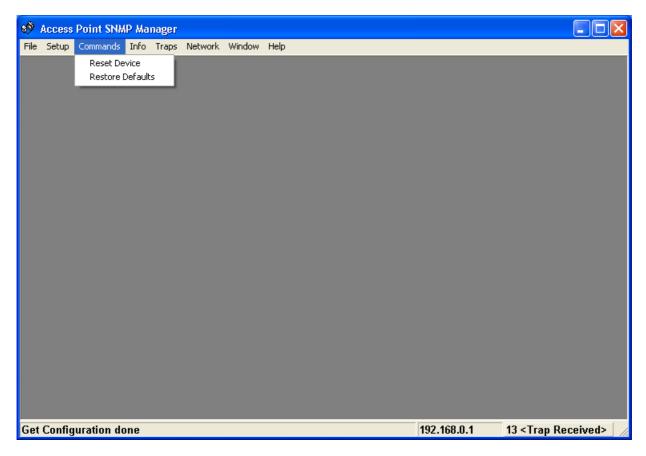
Authority configuration				
C Administrator Community				
New Community Confirm Community	жжжж жжжж			
 User Community 				
New Community	*****			
Confirm Community	****			
Apply	Cancel			

Commands menu

Under this menu there are two submenus.

Reset Device: you can reset the Access Point. This action takes place after a user makes configuration changes in order to initiate the changes.

Restore Default: You can restore the factory default values of the Access Point.



Info menu

Using this menu you can view a limited number of statistics by choosing the "SNMP-Short View" of the "Change Mode" Software. There are the following submenu:

<u>Wireless Statistics</u>: This submenu reports the statistics concerning the unit's Wireless activity.

6 Access Point SNMP Manager - WireLess Statistics	
File Setup Commands Info Traps Network Window Help	
Wireless Statistics Ethernet Statistics	
WireLess Statistics	
Unicast Transmitted Packets 0 Unicast Received Packets 0 Broadcast Transmitted Packets 17 Broadcast Received Packets 5 Multicast Transmitted Packets 0 Multicast Received Packets 0	
There are not Authorized Mac Addresses 192.168.0.1 8 < Trap Rece	eived>

The meaning of the fields, concerning all the statistics, is given in the following.

- Unicast Transmitted Packets: The number of unicast packets successfully transmitted.
- Broadcast transmitted packets: The number of broadcast packets transmitted.
- Multicast transmitted packets: The number of multicast packets transmitted.
- Unicast Received Packets: The number of unicast packets that were successfully received.
- *Broadcast Received*: The number of broadcast packets that were successfully received.
- *Multicast Received*: The number of multicast packets that were successfully received.

<u>Ethernet Wireless Statistics</u>: This submenu reports the statistics concerning the unit's Ethernet port activity. The meaning of the fields, concerning all the statistics is given in the following.

6 Access Point SNMP Manager - Ethernet Statistics	
File Setup Commands Info Traps Network Window Help	
Wireless Statistics Ethernet Statistics	
Ethernet Statistics	
Treceived Packets Total Bytes 2947 Total Packets 28 Packet CRC Errors 0 OK OK	
There are not Authorized Mac Addresses 192.168.0.1 8 < Trap Re	ceived>

Received Packets:

Total Bytes: The number of bytes in the frames that were received.

Total Packs: Total number of received packets.

Packet CRC Errors: The number of packets with CRC Errors.

Transmitted Packets:

Total Bytes: The number of bytes in the frames that were transmitted.

Total Packs: Total number of received transmitted.

Packet CRC Errors: The number of packets with CRC Errors.

Traps menu

Provides information for trap messages

View Record

You can see additional information for every Trap Message.

💖 Access Point SNMP Mana	ager - Trap Recorder		
File Setup Commands Info T	Traps Network Window Help		
	View Record		
	👌 Trap Recorder		
	Trap received @ 19:19:9 from host 192.168.0.1 This trap message is sent when Access Point Starts Up.		<u> </u>
	This (tap message is sent when Access Point Stats Op.		
	Clear		
	Liear		
There are not Authorized M	lac Addresses	192.168.0.1	8 <trap received=""> 🛛 🦯</trap>

Network menu

Provides information about the Network. Under this menu there is only the Associate Station submenu.

Associated stations

Using this submenu you can view the MAC Addresses of the Associated stations with the Access Point.

💖 Access Point SNMP Manager - Associated Stations	
File Setup Commands Info Traps Network Window Help	
Associated Stations	
Associated Stations	
There are not Authorized Mac Addresses	192.168.0.1

Window menu

Under this menu there are the following submenus

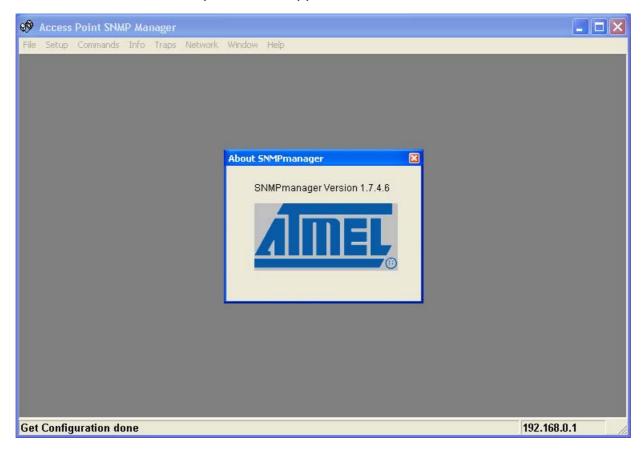
Cascade: All opened windows are arranged on the desktop in a cascade fashion.

<u>Tile</u>

All open windows are visible on the desktop.

Help menu

Provides on line help about the application.



5. Technical Specifications Wireless LAN Access Point

This section provides the Access Point specifications.

1, 2, 5.5 and 11Mbps
With outdoors line of sight PING to 250 meters
IEEE 802.11b compliant
2400-2500 MHz
Direct Sequence Spread Spectrum (DSSS)
Europe 13, USA 11, Japan 13, France 4
1 Mbps DBPSK 2 Mbps DQPSK 5.5 Mbps CCK 11 Mbps CCK
10/100Base-T (RJ-45)
AC 100-240V 50-60 Hz to 5VDC / 1A converter incl.
Seamless roaming across cell boundaries
IEEE standard WEP 40-bit, 128-bit
0°C to 55°C operating 95% humidity
SNMP agent with support for MIB-II and IEEE 802.11 MIB
Power, RF activity, Ethernet connection
AP management software for windows 9X / ME/ 2000 / XP.
Meet for CE & FCC part 15

Troubleshooting

Possible Remedy:

The Power and Act LEDs should be always on after you plug in the power. If not, please check the power adaptor/cord or contact your vendor.

Symptom:

The Link LED is off.

Possible Remedy:

The Link LED should be on after you plug in the Ethernet cable that the other end is connecting to Hub. If not, please check the RJ-45 connector/twist pair/Hub is operating properly or contact your vendor.

Symptom:

Can't configure this AP.

Possible Remedy:

- 1. Make sure that you have installed SNMP Manager from attached CD.
- 2. Check the Ethernet connection. The AP is designed to connect to hub directly or connect to PC with crossover twist pair.
- 3. Check the IP address. The AP left from factory with a default IP address, 192.168.0.1. If this address does not belong to the Sub Network of the configuring terminal, then you would execute **IPConfig.exe** from attached CD to modify it. The MAC address could be found on the button side.

Symptom:

After configuration is done, but there is no any client associating with AP.

Possible Remedy:

- 1. Make sure there is any properly operating client in the serving area.
- 2. Verify the clients and AP is sharing the same SSID and channel.
- 3. Make sure they are operating under same authentication type. WEP function has to be enabled, if Shared Key Authentication is the selection, and the secret Keys have to be same in the communicating group.
- 4. Position the antenna to gain the maximum RF power and make sure there is no metal objects, electron devices or cordless phone in the vicinity.

Symptom:

Slow or erratic performance

Possible Remedy:

Try change the wireless channel on the AP or move clients closer to the AP.

Glossary

IEEE 802.11 Standard

The IEEE 802.11 Wireless LAN standards subcommittee, which is formulating a standard for the industry. The objective is to enable wireless LAN hardware from different manufacturers to enteropera.

Access Point

An internetworking device that seamlessly connects wired and wireless networks together.

Ad Hoc

An Ad Hoc wireless LAN is a group of computers, each with a WLAN adapter, connected as an independent wireless LAN. Ad Hoc wireless LAN is applicable at a departmental scale for a branch or SOHO operation.

BSSID

A specific Ad Hoc LAN is called a Basic Service Set (BSS). Computers in a BSS must be configured with the same BSSID.

DHCP

Dynamic Host Configuration Protocol - a method in which IP addresses are assigned by server dynamically to clients on the network. DHCP is used for Dynamic IP Addressing and requires a dedicated DHCP server on the network.

Direct Sequence Spread Spectrum

This is the method the wireless cards use to transmit data over the frequency spectrum. The other method is frequency hopping. Direct sequence spreads the data over one frequency range (channel) while frequency hopping jumps from one narrow frequency band to another many times per second.

ESSID

An Infrastructure configuration could also support roaming capability for mobile workers. More than one BSS can be configured as an Extended Service Set (ESS). Users within an ESS could roam freely between BSSs while served as a continuous connection to the network wireless stations and Access Points within an ESS must be configured with the same ESSID and the same radio channel.

Ethernet

Ethernet is a 10/100Mbps network that runs over dedicated home/office wiring. Users must be wired to the network at all times to gain access.

Gateway

A gateway is a hardware and software device that connects two dissimilar systems, such as a LAN and a mainframe. In Internet terminology, a gateway is another name for a router. Generally a gateway is used as a funnel for all traffic to the Internet.

IEEE

Institute of Electrical and Electronics Engineers

Infrastructure

An integrated wireless and wired LAN is called an Infrastructure configuration. Infrastructure is applicable to enterprise scale for wireless access to central database, or wireless application for mobile workers.

ISM Band

The FCC and their counterparts outside of the U.S. have set aside bandwidth for unlicensed use in the so-called ISM (Industrial, Scientific and Medical) band. Spectrum in the vicinity of 2.4 GHz, in particular, is being made available worldwide. This presents a truly revolutionary opportunity to place convenient high-speed wireless capabilities in the hands of users around the globe.

Local Area Network (LAN)

A LAN is a group of computers, each equipped with the appropriate network adapter card connected by cable/air, that share applications, data, and peripherals. All connections are made via cable or wireless media, but a LAN does not use telephone services. It typically spans a single building or campus.

Network

A network is a system of computers that is connected. Data, files, and messages can be transmitted over this network. Networks may be local or wide area networks.

PCMCIA

Personal Computer Memory Card International Association. Also a PCMCIA card is also referred to PC Card.

Protocol

A protocol is a standardized set of rules that specify how a conversation is to take place, including the format, timing, sequencing and/ or error checking.

Roaming

In an infrastructure network, this is when a wireless PC moves out of range of the previously connected access point and connects to a newly connected access point. Throughout the network environment where access point are deployed, PCs can always be connected regardless of where they are located or roam.

SSID

A Network ID unique to a network. Only clients and Access Points that share the same SSID are able to communicate with each other. This string is case-sensitive.

Simple Network Management Protocol (SNMP)

Simple Network Management Protocol is the network management protocol of TCP/IP. In SNMP, agents-which can be hardware as well as software-monitor the activity in the various devices on the network and report to the network console workstation. Control information about each device is maintained in a structure known as a management information block.

Static IP Addressing

A method of assigning IP addresses to clients on the network. In networks with Static IP address, the network administrator manually assigns an IP address to each computer. Once a Static IP address is assigned, a computer uses the same IP address every time it reboots and logs on to the network, unless it is manually changed.

Transmission Control Protocol / Internet Protocol (TCP/IP)

TCP/IP is the protocol suite developed by the Advanced Research Projects Agency (ARPA). It is widely used in corporate Internet works, because of its superior design for WANs. TCP governs how packet is sequenced for transmission the network. The term "TCP/IP" is often used generically to refer to the entire suite of related protocols.

Transmit / Receive

The wireless throughput in Bytes per second averaged over two seconds.

Wide Area Network (WAN)

A WAN consists of multiple LANs that are tied together via telephone services and / or fiber optic cabling. WANs may span a city, a state, a country, or even the world.

Wireless LAN (WLAN)

A wireless LAN does not use cable to transmit signals, but rather uses radio or infrared to transmit packets through the air. Radio Frequency (RF) and infrared are the commonly used types of wireless transmission. Most wireless LANs use spread spectrum technology. It offers limited bandwidth, usually under 11Mbps, and users share the bandwidth with other devices in the spectrum; however, users can operate a spread spectrum device without licensing from the Federal Communications Commission (FCC).