

# **LevelOne**

**11 Mbps Wireless LAN Access Point**

**WAP-0001**

Version 2.0

**Copyright Statement**

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## Notes:

Passed CE & FCC testing, the product can be used in the following countries:

North America: US, Canada

Europe: Germany, France, Italy, England, Spain, Austria, Danish, Finland, Iceland, Luxembourg, Netherlands, Norway, Sweden, Switzerland



## Radio Channel Selection Table

	Regulatory domains				
Channel_ID	U.S.A.	Canada	Most of Europe	France	Japan
1	X	X	X	—	X
2	X	X	X	—	X
3	X	X	X	—	X
4	X	X	X	—	X
5	X	X	X	—	X
6	X	X	X	—	X
7	X	X	X	—	X
8	X	X	X	—	X
9	X	X	X	—	X
10	X	X	X	X	X
11	X	X	X	X	X
12	—	—	X	X	X
13	—	—	X	X	X
14	—	—	—	—	X

**X = Yes**

**— = No**

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## **Regulatory Information**

### **Federal Communication Commission Interference Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

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

FCC Caution: To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices) any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### **IMPORTANT NOTE:**

#### **FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

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

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# 1. Welcome

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Thank you for purchasing LevelOne Access Point! LevelOne Access Point is easy to install and easy to operate—in no time you will have your own wireless network.

This guide will lead you through the installation process in detail. Please read this manual carefully and keep it for future reference.

You need to have a basic knowledge of installation procedures for network operating systems under Microsoft® Windows™ 95 (or up) and Windows™ NT.

## 1.1 Advantages of Using Wireless Network

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Advantages for Using a Wireless Network:

- *For hard to wire areas:* LevelOne Access Point provides access to network services in areas otherwise hard or expensive to wire, such as historic buildings with asbestos and classrooms.
- *Flexible workgroups:* Lower total cost of ownership for workspaces that are frequently reconfigured.
- *Networked conference rooms:* users can access the network as they move from meeting to meeting, can get up-to-date access to information and can communicate while ‘on the go’.
- *Easy Network:* with quick network setup and collaboration software, on site consultants and small workgroups increase efficiency and productivity.
- *Branch office networking:* provides an easy to install, use and maintain network for a remote or sales office.
- *Campus-wide network mobility:* roaming capabilities allow enterprises to set up easy-to-use wireless networks that cover the entire campus transparently.

## **1.2 About LevelOne Access Point**

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The LevelOne Access Point is a modular unit with an integrated Ethernet interface that enables you to use your LevelOne Access Point with your adaptors. The Antennas are built-in which creates further wireless atmosphere and a cleaner look. The LevelOne Access Point is a wired to wireless bridge that you can use to connect wireless cells to one another or to a wired (Ethernet) Local Area Network. The LevelOne Access Point can serve mobile wireless clients roaming between various locations within network premises.

## **1.3 Kit Contents**

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The contents of the box should include the following items:

- User's Guide
- Quick Start Guide
- LevelOne Access Point (with the MAC-address in the back)
- Power line with power adapter
- CD: containing Installation Driver and SNMP Manager Software

If you find any incorrect, missing or damaged parts, please contact the vendor immediately.

## **1.4 Wireless Adaptor**

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Adaptor comes in separate packages. It is a wireless network adapter, that allows sharing of Internet access and peripherals through LevelOne Access Point. Adaptor comes in two types: PC Card and USB Adapter. PC Card is for the use of notebook only, whereas USB is compatible for both computer and notebook.

## **1.5 System Interoperatability**

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LevelOne Access Point is able to integrate with other brand's wireless network communication systems.



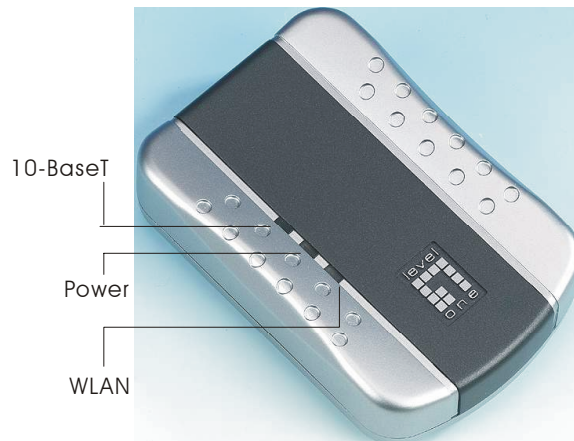
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## 2. Step-by-Step Installation Guide

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This section helps you with the installation of the LevelOne Access Point. Please follow the instructions on how to install your LevelOne Access Point:

1. Mount the LevelOne Access Point firmly to the wall on the desired position. A drill model is supplied as a separate sheet with this manual.
2. Connect Ethernet cable to LevelOne Access Point's RJ-45 Port
3. Connect power adapter to LevelOne Access Point, and "Power" LED of LevelOne Access Point will turn green.



### Is your Installation Successful?

At the front of LevelOne Access Point you will see three LEDs.

If the installation is successful, the "Power" LED is green. The "WLAN" LED flashes red and the "10-BaseT" LED flashes yellow whenever there is traffic on the respective network.<sup>1</sup>

### How to Select Wired Network?

LevelOne Access Point will automatically select the medium attached. When the cable network is detected, the "10-BaseT" LED will turn yellow.

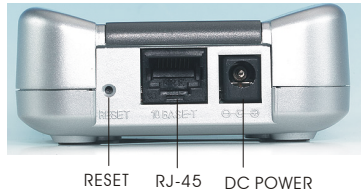
### Factory Settings

You can reset LevelOne Access Point by pushing a paperclip into the little hole next to the power switch. Hold for about 3 seconds to reset the device hardware, or

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<sup>1</sup> The –insert pic- flash at least 10 times per second for the wireless LAN because of so-called 'beacons'

about 8 seconds to return to the factory default settings. While resetting, you can see the “WLAN” LED turn off and back on flashing red again. Right after you release holding, the “10-BaseT” LED will turn off and back on flashing yellow again.



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## **3. LevelOne Access Point SNMP Manager**

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### **3.1 About LevelOne Access Point SNMP Manager**

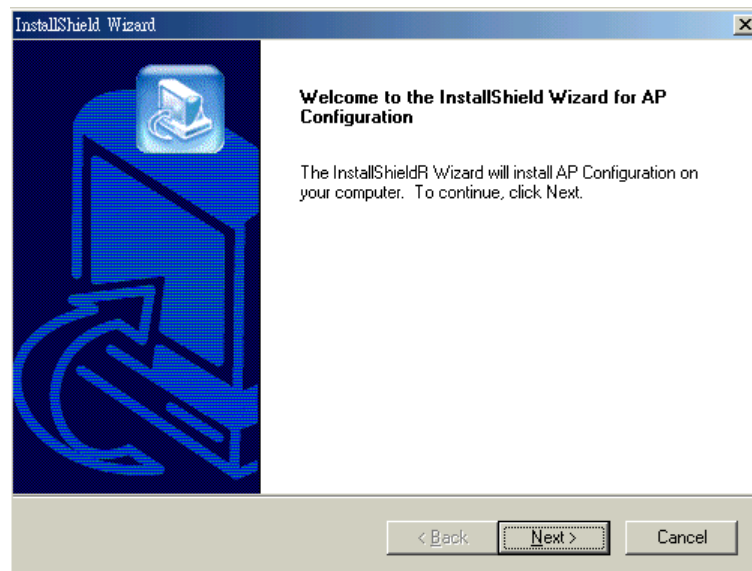
LevelOne Access Point SNMP Manager allows users to view contents of all wireless networks under Windows<sup>™</sup> system (e.g. how many LevelOne Access Points there are in a WLAN). You can use it to control a large number of IEEE 802.11b LevelOne Access Points from a single location. All indicate a simpler management for your wireless LAN. LevelOne Access Point SNMP Manager is easy to operate and understand.

SNMP Manager allows you to edit your WLAN in the following areas:

- Restricting access to the Wireless network
- Managing data protection options such as IEEE 802.11b
- Assigning radio channel for optimal cell management
- Grouping the wireless network into multiple WLANs with individual access control and security options
- Programming an LevelOne Access Point with a specified IP address
- Setting the SNMP Community for security concern (see Chapter 4.2.2)
- Verifying the status of all LevelOne Access Points in the network

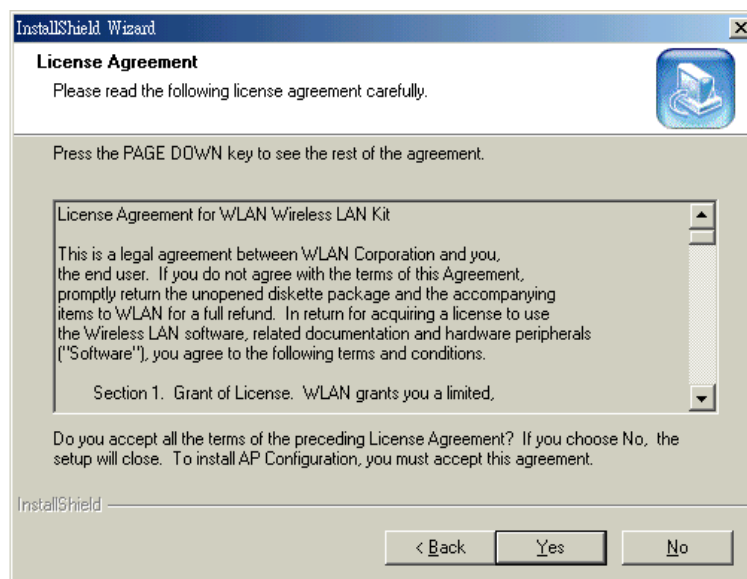
## **3.2 Installing SNMP Manager**

- Step 1.** To Install LevelOne Access Point SNMP Manager, please insert CD containing SNMP Manager into one computer of the LAN. Wait a few seconds for the screen below to show up. Click 'Next'.

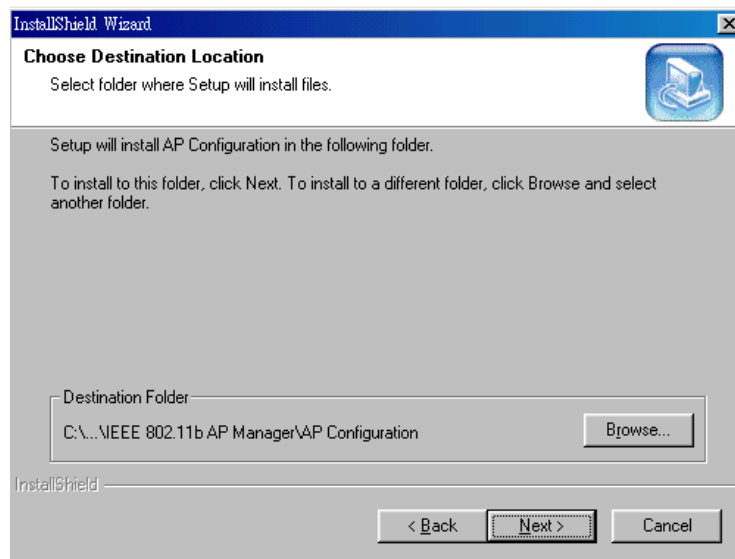


If InstallShield Wizard window doesn't display, please go to 'My Computer' and double click on CD-ROM drive. Run 'Setup.exe'.

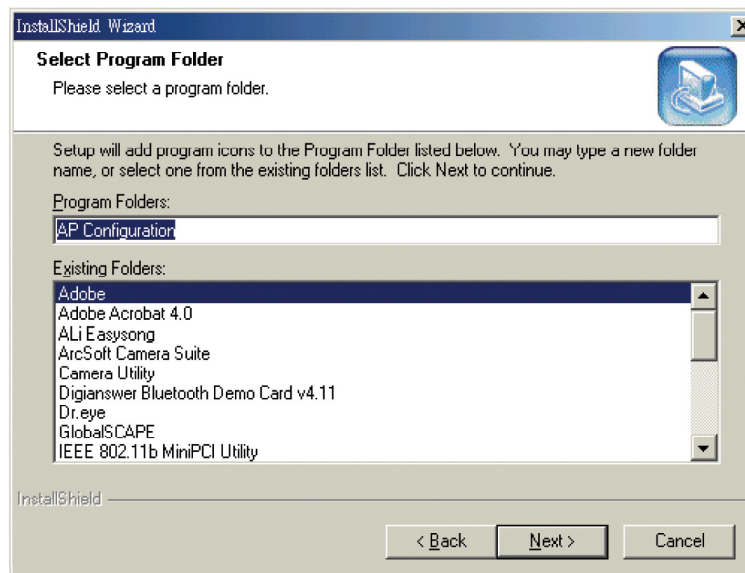
- Step 2.** Read the License Agreement and click 'Yes' if you accept the terms.



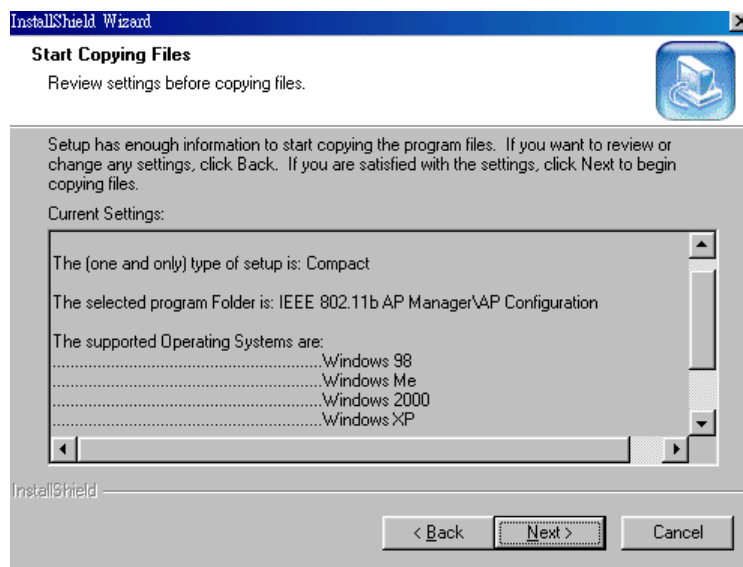
**Step 3.** Choose Destination Location: Click 'Browse' to choose a destination folder and click 'Next' to install AP Configuration.



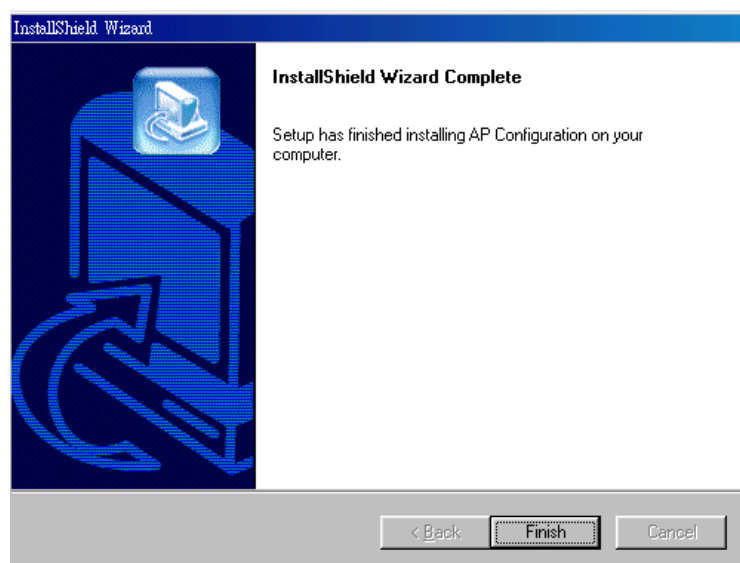
**Step 4.** Select Program Folder: Type a new folder name or select one from the Existing Folders list. Click 'Next'.



**Step 5.** Start Copying Files: Review the settings before copying files. If necessary, click 'Back' to make changes. Click 'Next' to start copying.



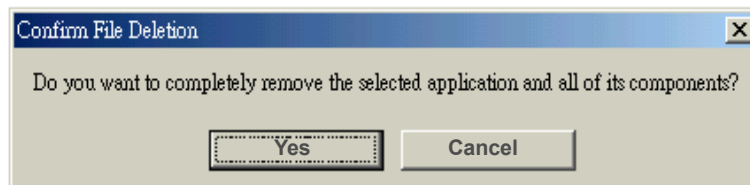
**Step 6.** Congratulations, AP Configuration is successfully installed! Click 'Finish'.



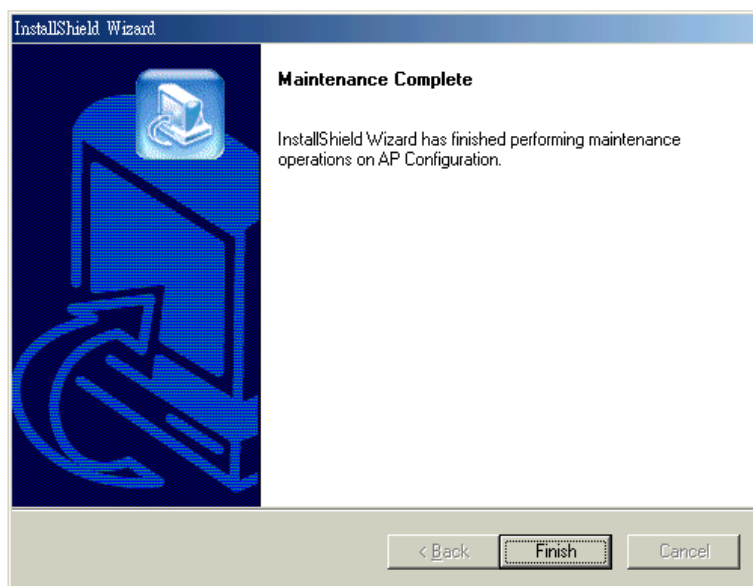
### **3.3 Uninstalling SNMP Manager**

**Step1.** In 'AP Configuration' folder, click on 'Uninstall AP Configuration'.

**Step 2.** Click 'Yes'.



**Step 3.** Uninstallation is complete. Click 'Finish'.



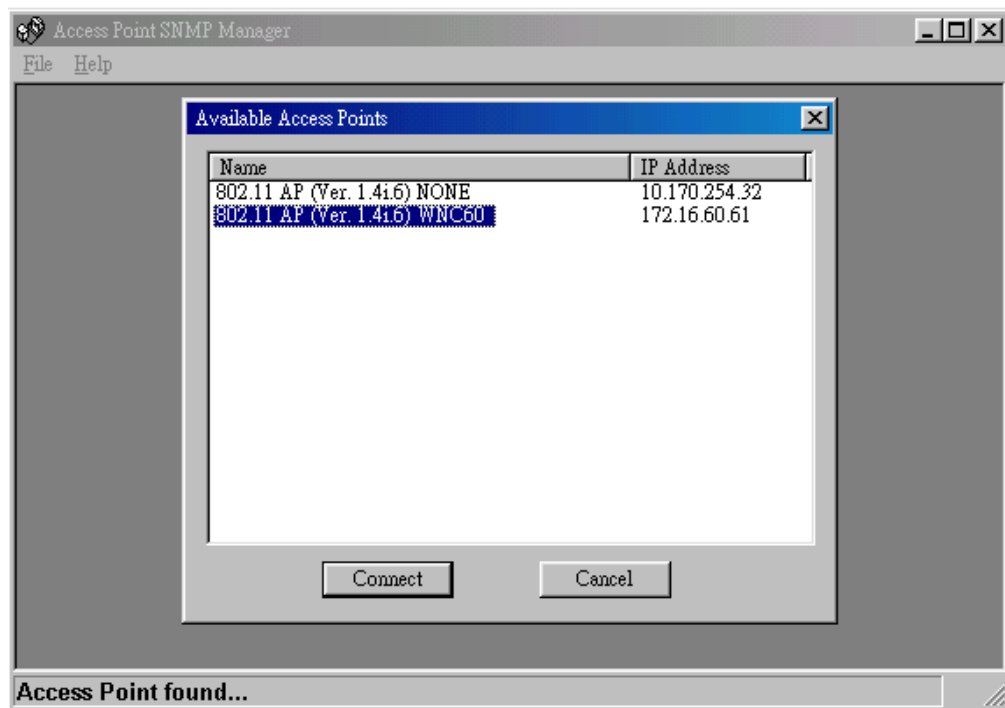
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## 4. Using LevelOne Access Point SNMP Manager

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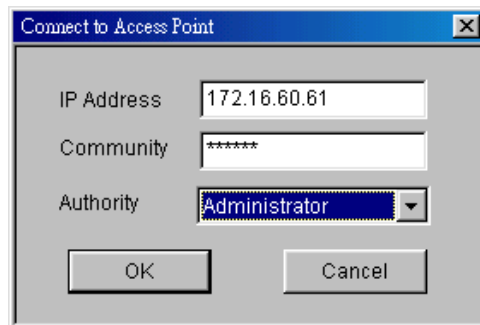
### 4.1 Connecting to the LevelOne Access Point

- Follow the steps to connect to the LevelOne Access Point:  
**Step 1.** In 'AP Configuration' folder, click on 'AP Configuration'.  
**Step 2.** On the File Menu, click File>Find LevelOne Access Point. After searching, you can see the list of all available LevelOne Access Points.  
**Step 3.** Select one LevelOne Access Point and click 'Connect'.

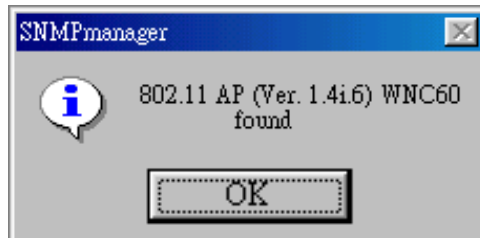




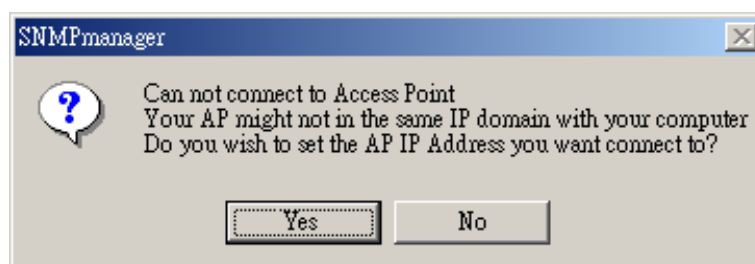
**Step 4.** The IP address of the LevelOne Access Point will be shown automatically. Enter the password in the Community field. For the first time connecting, type the default password “public” in the Community field. (See Chapter 4.2.3 Authorization for setting a new password.) Select “User” or “Administrator” in Authority field and then press ‘OK’. (Choose “Administrator” to view, set or save changes to AP configuration. “User” authority allows only viewing the settings.



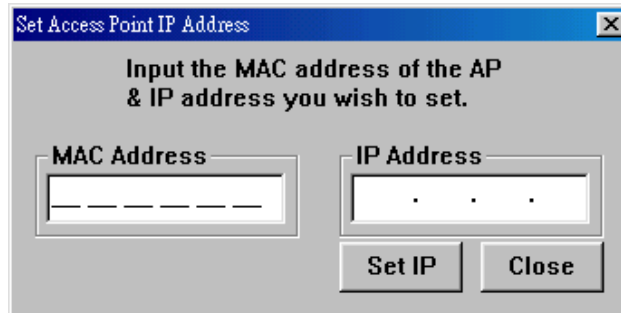
**Step 5.** When the chosen LevelOne Access Point is found, click ‘OK’.



If the designated LevelOne Access Point is not found, an error message appears. This might because that the AP does not use the same IP domain as your computer's. Click ‘Yes’ to set a proper IP address, and reconnect again. Click ‘No’ to close error message box and try to find another LevelOne Access Point.

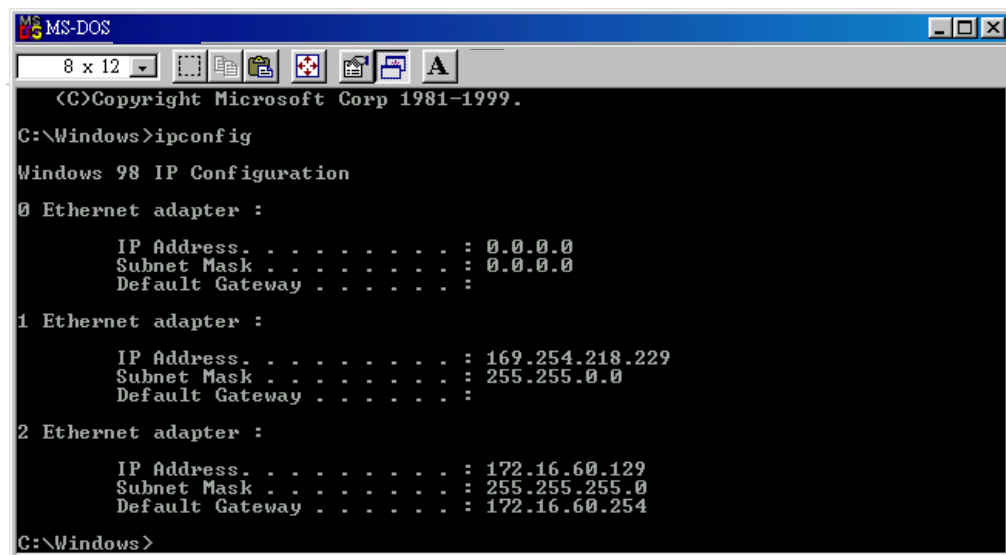


**Step 6.** Enter the MAC address and IP address of the AP. The MAC address is printed on the back panel of the product. For the IP address, please contact your network administrator. Click “Set IP” and then “Close”.



**Note!** You may ping the LevelOne Access Point to see if the LevelOne Access Point has the correct IP address and is connected to the network properly.

You can use “ipconfig” command to view current IP address of your computer.



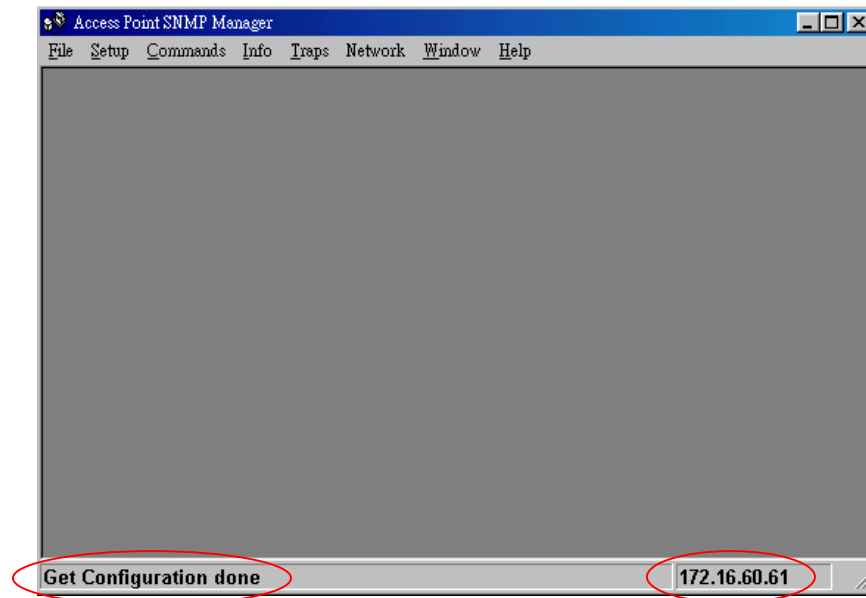
**Step 7.** After setting the IP address, follow Step 1 through Step 5 again to activate the connection.

**Step 8.** If you want to exit LevelOne Access Point SNMP Manager, select File>Exit.

- To view the version of the LevelOne Access Point SNMP Manager, click Help>About SNMP Manager.
- To get help with connecting to the LevelOne Access Point, click Help>Help Topics.

## 4.2 Configuring the LevelOne Access Point

Once the connection has been completed, you can see two messages in the bottom of the window. The one in the left shows “Get Configuration done”; the other one in the right display the IP address of the connected LevelOne Access Point.



### 4.2.1 Setting the IP address of the LevelOne Access Point

To set the IP address of the LevelOne Access Point, follow the steps:

**Step 1.** Click Setup>Bridge>IP Configuration

**Step 2.** When Bridge IP Configuration page displays, set the new IP address, IP Mask, and Gateway, and then click ‘OK’. If the network uses DHCP server, simply select the check box of the “DHCP Enable” and click ‘OK’. In DHCP network, the IP address will be assigned automatically. (You may contact your network administrator for these settings.)

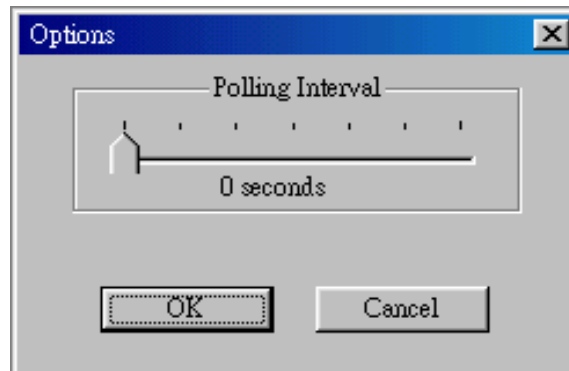
**Step 3.** Click File>Download Changes to save and implement the changes.

Details of each submenus are listed as follows:

### 4.2.2 File Menu

- **Close Connection AP:** To close the connection with the LevelOne Access Point.
- **Download Changes:** Allows you to save any changes made for settings.
- **Refresh:** Used when you want to close the current connection and reconnect to the LevelOne Access Point again.

- **Options:** Indicates the polling interval according to which the SNMP Manager polls the LevelOne Access Point in order to update the statistics and the Associated Stations List. The default value is 0 seconds.



- **Exit:** To close the connection and exit LevelOne Access Point SNMP Manager.

#### 4.2.3 Setup Menu

- **IP Configuration:** Click Setup>Bridge>IP Configuration to view or modify IP address, IP Mask or Gateway settings. Note! If you modify any settings, do not forget to save them by clicking File>Download Changes.

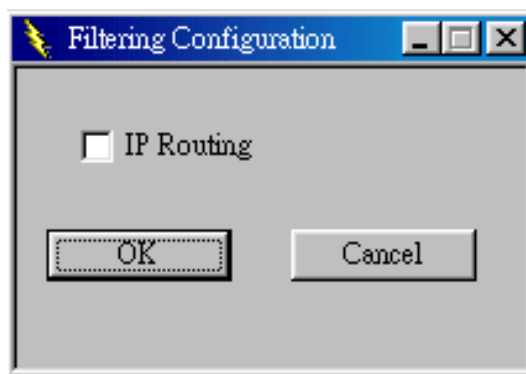


1. **MAC Address:** Stands for Media Access Control. The physical address of a device connected to a network expressed as a 48-bit hexadecimal number. This parameter cannot be changed.
2. **IP Address:** Indicates the Network-assigned Internet Protocol address of the LevelOne Access Point.
3. **IP Mask:** A number used to identify a subnetwork when multiple networks share an IP address.

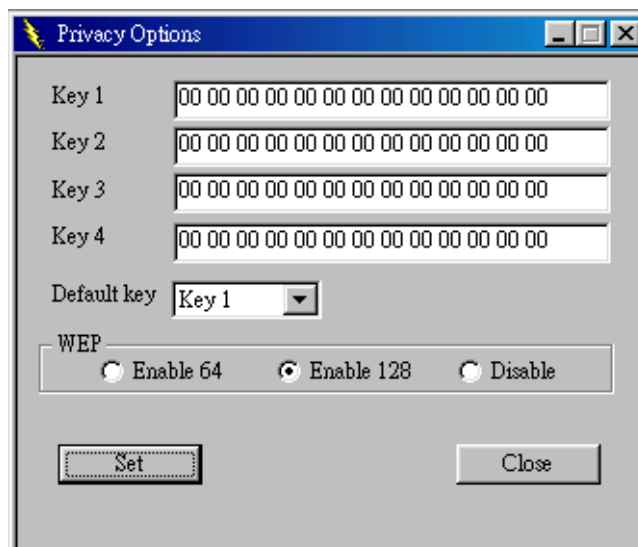
4. **Gateway:** Indicates the IP address of the gateway been used currently.
5. **DHCP Enable:** DHCP stands for Dynamic Host Configuration Protocol. Select the check box to enable DHCP, and then the network DHCP server will dynamically assign the IP Address to the AP.
6. **Primary Port:** If you enable DHCP, you have to select the Primary Port, which is the interface that determines the DHCP server.

- **Filtering:** Click Setup>Bridge>Filtering.

1. **IP Routing:** Select IP Routing to allow only the IP protocol packets to pass through the WLAN. Any other protocol will be filtered out.

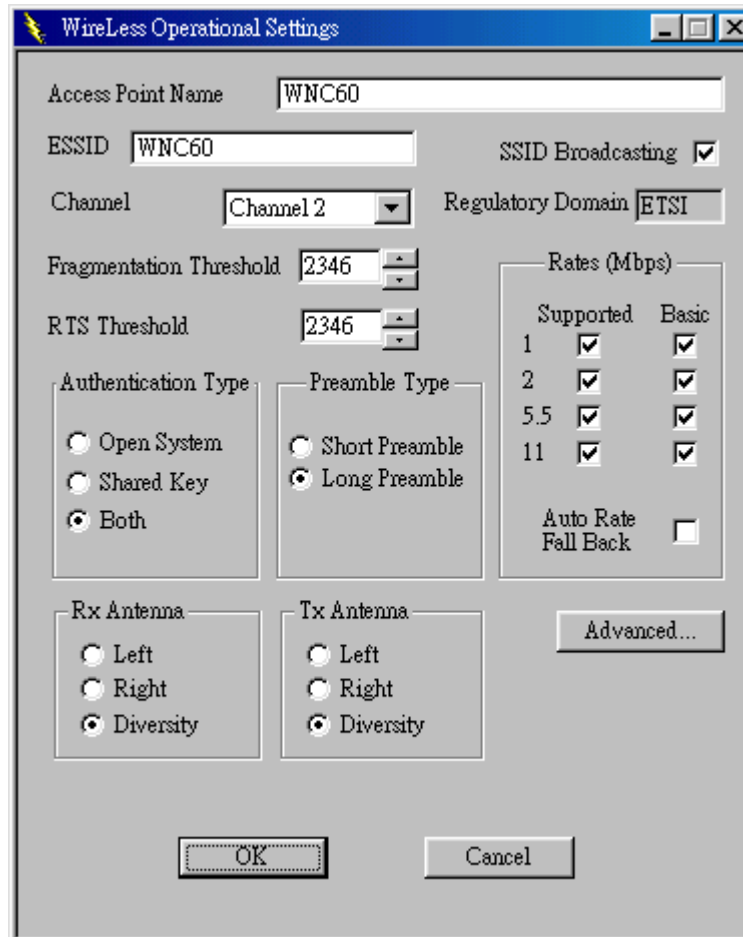


- **Privacy Options:** Click Setup>Wireless LAN>Privacy Option to set the WEP to secure the transmissions between the stations and the LevelOne Access Point. In Privacy Options, define the encryption key values of your choice. Key1~Key4 are four 5 Hex digit encryption keys. The key is enabled only if it is selected in the “Default key” field. Press ‘Set’ to save the encryption key data.



1. **Enable 64 (64-bit):** When 64-bit is selected, the user is required to type 10 hexadecimal values in the following range (0~F). Tap Apply to save and implement the encryption key data.
2. **Enable 128 (128-bit):** When 128-bit is selected, the user is required to type 26 hexadecimal values in the following range (0~F). The 128-bit encryption option provides a higher level of security than 64-bit encryption while maintaining an 11 Mbps data rate. Tap Apply to save the encryption key data.
3. **Disable:** This is the default setting. When Disable is selected, the encryption is disabled.

- **Operational settings:** Click Setup>Wireless LAN>Operational settings



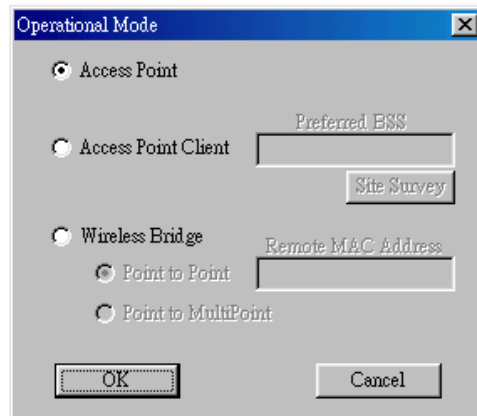
The image shows a Windows-style dialog box titled "WireLess Operational Settings". It contains various configuration options for a wireless network. The "Access Point Name" and "ESSID" fields are both set to "WNC60". "SSID Broadcasting" is checked. The "Channel" is set to "Channel 2" and the "Regulatory Domain" is set to "ETSI". The "Fragmentation Threshold" and "RTS Threshold" are both set to "2346". Under "Authentication Type", "Both" is selected. Under "Preamble Type", "Long Preamble" is selected. The "Rates (Mbps)" section shows a table of supported and basic rates. "Auto Rate Fall Back" is unchecked. There are sections for "Rx Antenna" and "Tx Antenna", both with "Diversity" selected. An "Advanced..." button is located to the right of the antenna settings. At the bottom are "OK" and "Cancel" buttons.

Rates (Mbps)		
	Supported	Basic
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5.5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

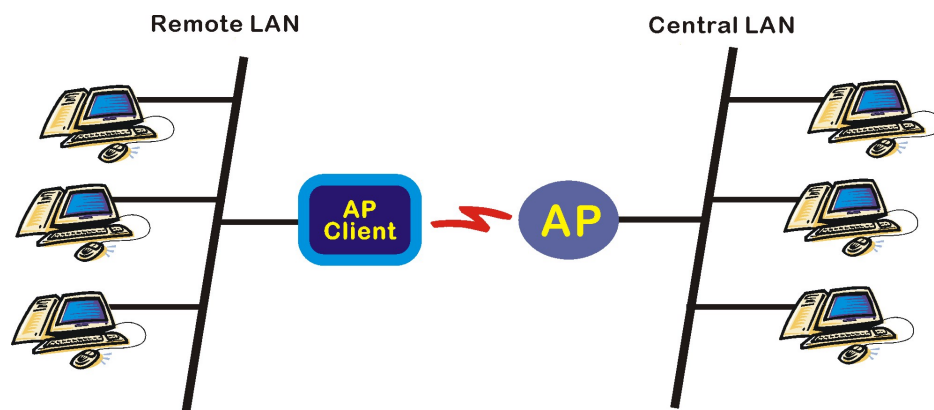
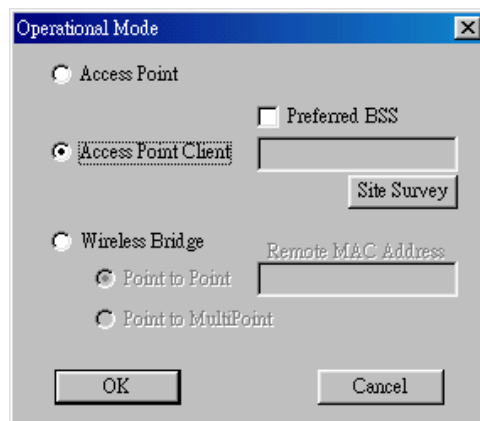
1. **LevelOne Access Point Name:** Indicates the name of the LevelOne Access Point been used currently.
2. **ESSID:** Enter an ESSID in this field. The ESSID is a 32-character (maximum) string identifying the wireless local area network. The ESSID value should be the same in all stations and LevelOne Access Point in the extended WLAN.
3. **Channel:** 14 channels are available. The channels differ from country to country. Please do not illegally use the channel.
4. **Fragmentation threshold:** Indicates the size at which packets will be fragmented. You may select one within a range of 256 to 2346 bytes.
5. **RTS Threshold:** RTS stands for Request To Send. This field indicates the minimum packet size to require an RTS. When packets are smaller than this threshold, an RTS is not sent and the packet is transmitted directly to the WLAN.
6. **Authentication Type:** Choose *Open System*, *Shared Key* or *Both*.  
*Open System:* Allows any station in the WLAN to associate with an LevelOne Access Point and receive and transmit data.  
*Shared Key:* Allows only stations using a shared key encryption identified by the LevelOne Access Point to associate with it.  
*Both:* Allows stations communicate with the LevelOne Access Point either with or without data encryption.
7. **Preamble Type:** Select Short Preamble or Long Preamble. Short Preamble option improves throughput performance.
8. **SSID Broadcasting:** Check this box to ensure the LevelOne Access Point will be found when Site-survey is executed.
9. **Regulatory Domain:** This value is set and cannot be modified.
10. **Rate:** The default setting allows the unit to adaptively select the highest possible rate. You have 4 options: 1, 2, 5.5 or 11 Mbps.
11. **Auto Rate Fall Back:** Automatically adjust the data rate depending on the transmission distance. In case of any interference, the system will automatically fall back.
12. **Advanced:** Click “Advanced” to open operational mode dialog box.

### Operational Mode:

- ◆ **LevelOne Access Point:** Select this mode to have access from Wireless Stations to Wired LANs and from Wired LANs to Wireless Stations. All wireless stations within the range of the AP can communicate with each other via the AP.



- ◆ **LevelOne Access Point Client:** Select this mode to enable the connection of one or more remote LANs with a central LAN. In this option, stations of the Remote LAN can communicate with stations of the central LAN.

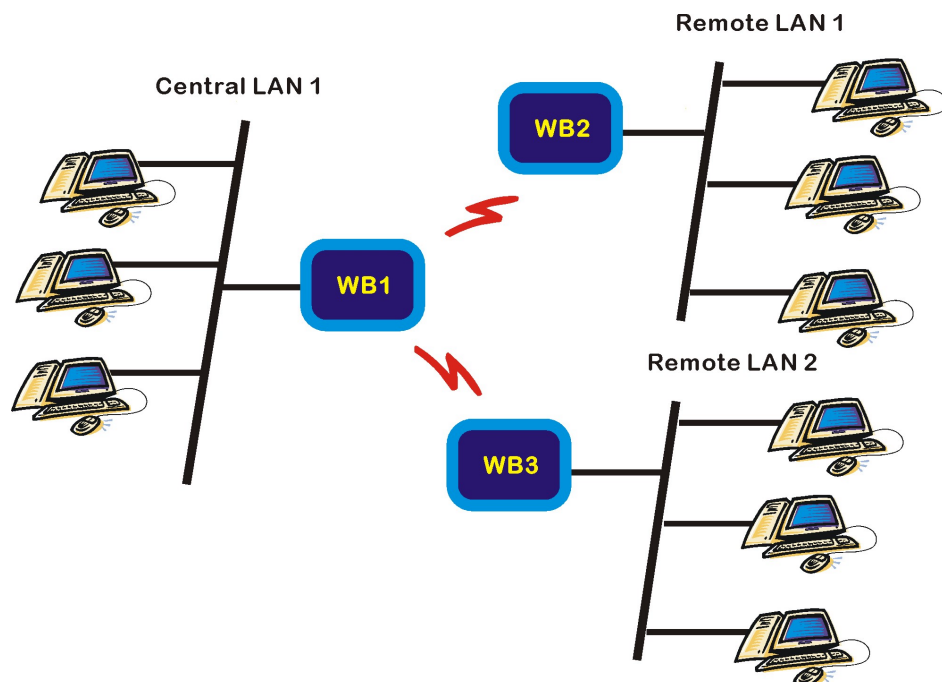
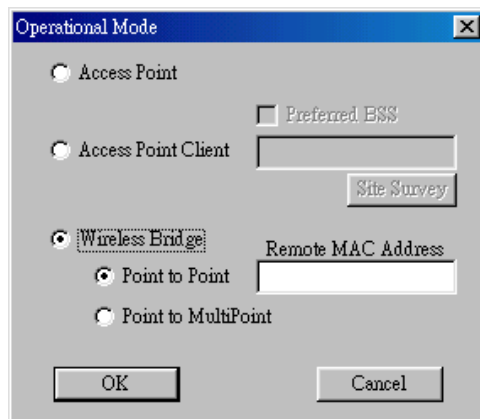




**Preferred BSS:** It is enabled when LevelOne Access Point Client is selected. Type the MAC address of the desired LevelOne Access Point in this field.

- **Site Survey:** Click “Site Survey” to get “Known BSSs” dialog box. Click “Get/Reflash” to see the list of available LevelOne Access Points in the vicinity. In the SSID column, highlight one LevelOne Access Point and click “Connect”. A message pops up and tells you that “Device is connecting as LevelOne Access Point Client”.

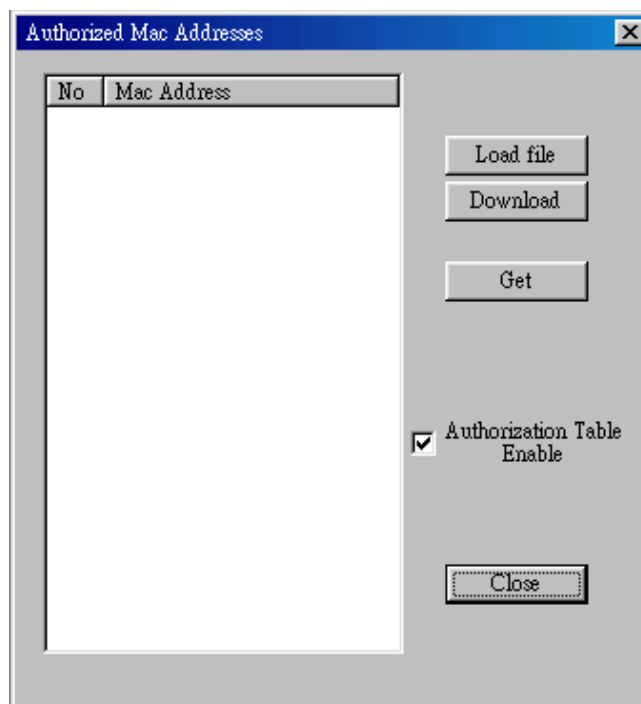
- ◆ **Wireless Bridge:** Select this mode to enable a wireless connection between two or more Wired LANs.



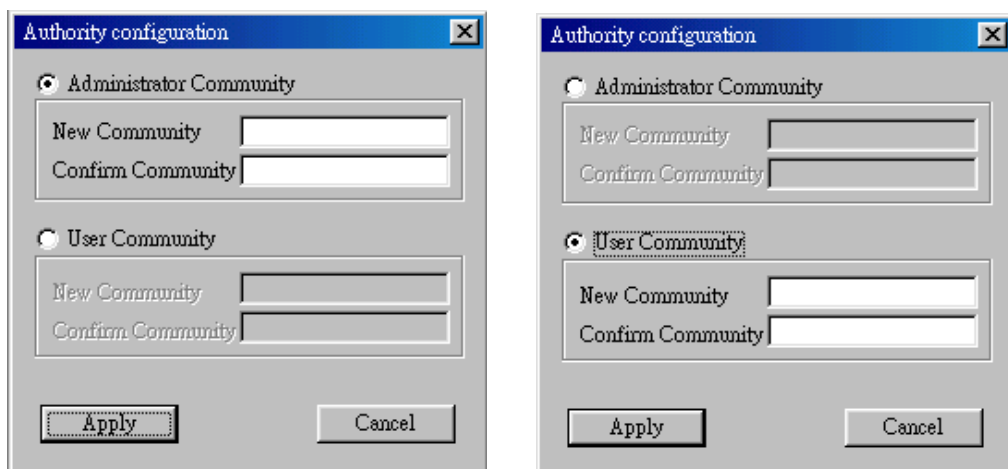
- **Point to Point:** In this option, only two LANs can be connected through two Wireless Bridges.
- **Remote MAC Address:** When “Point to Point” is selected, Remote MAC Address must be set. Type the MAC address of the Wireless Bridge of the Remote LAN.
- **Point to Multipoint:** In this option, the Wireless Bridge can communicate with more than one Wireless Bridges in the same channel. When Authorization Table is enabled, the Wireless Bridge can connect to those MAC Addresses listed in the Authorization Table.

**Note!** Once the LevelOne Access Point is connected as an LevelOne Access Point Client or as a Wireless Bridge, the RF LED flash rate becomes slower than the flash rate under other circumstances.

- **Authorized Mac Addresses:** Click Setup>Wireless LAN>Authorized Mac Addresses.
  1. Load file: Used to retrieve the MAC address list from files.
  2. Download: Used to assign which MAC addresses are allowed to connect to the LevelOne Access Point.
  3. Get: Used to get all the MAC addresses of devices connecting to the LevelOne Access Point currently.
  4. Authorization Table Enable: Check this box to implement the function.



- **Enable SNMP Traps:** Click Setup>Enable SNMP Traps to select enable or disable SNMP Traps that are messages indicate that an action related to the LevelOne Access Point took place. You can find the messages in the right bottom corner of the window. Permitted messages include:  
**Trap Reassociation:** When a Station's reassociation request is received from the AP-Bridge  
**Trap Association:** When an association request packet is received and the Station successfully associate with the Wireless Bridge.  
**Trap Disassociation:** When a disassociation notification packet is received from a station.  
**Trap Reset:** When the AP resets.  
**Trap Setting IP Address with Ping:** When the AP-Bridge IP Address is set with the transmission of a ping message.  
**Trap Start Up:** When the AP starts up.  
**Trap Failed To Erase Flash:** When Bridge fails to erase flash.
- **Authorization:** Click Setup>Authorization.



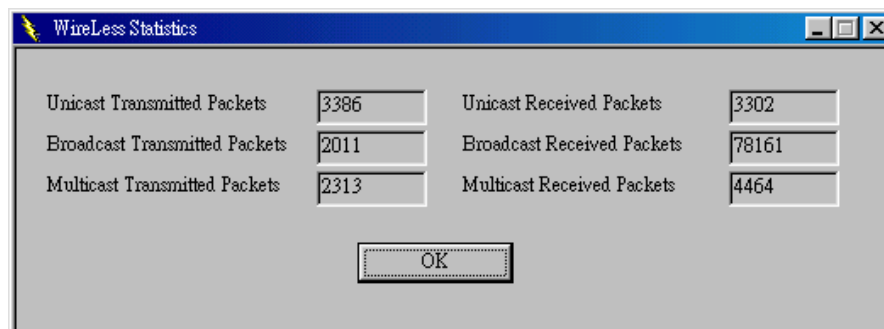
The default code of Community is "public". You can change the setting in this page. Once it's been changed, next time you'll need to enter the new community code to connect with the LevelOne Access Point. (See Chapter 4.1 – Step4.)

#### 4.2.4 Commands menu

- **Reset Device:** Used to reset the LevelOne Access Point. Click Commands>Reset Device.
- **Restore Defaults:** Used to restore the original default values of the LevelOne Access Point. Click Commands>Restore Defaults.

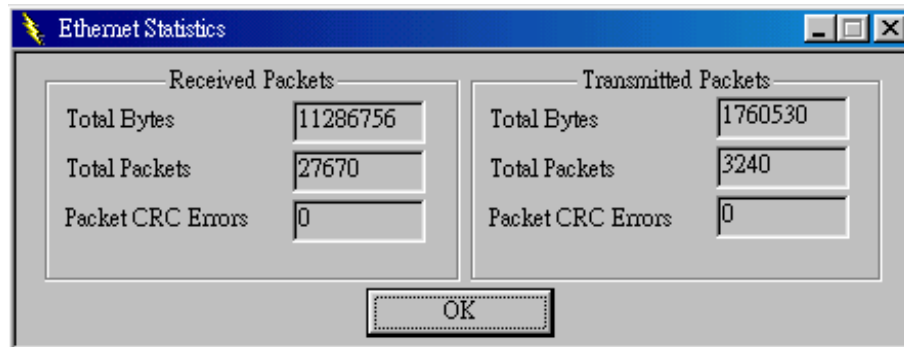
#### 4.2.5 Info menu

- **Wireless Statistics:** Where you can see the statistics report of the Wireless activity.



1. **Unicast Transmitted Packets:** Indicates the number of unicast packets being successfully transmitted.
2. **Broadcast Transmitted Packets:** Indicates the number of Broadcast packets transmitted.
3. **Multicast Transmitted Packets:** Indicates the number of multicast packets transmitted.
4. **Unicast Received Packets:** Indicates the number of unicast packets that were successfully received.
5. **Broadcast Received Packets:** Indicates the number of broadcast packets being received successfully.
6. **Multicast Received Packets:** Indicates the number of multicast packets being received successfully.

- **Ethernet Statistics:** Where you can read the statistics report of the Ethernet port activity.



The screenshot shows a window titled "Ethernet Statistics" with a blue title bar. Inside, there are two main sections: "Received Packets" on the left and "Transmitted Packets" on the right. Each section contains three rows of data: "Total Bytes", "Total Packets", and "Packet CRC Errors". The values for Received Packets are 11286756, 27670, and 0 respectively. The values for Transmitted Packets are 1760530, 3240, and 0 respectively. An "OK" button is located at the bottom center of the window.

Received Packets		Transmitted Packets	
Total Bytes	11286756	Total Bytes	1760530
Total Packets	27670	Total Packets	3240
Packet CRC Errors	0	Packet CRC Errors	0

**Received Packets:**

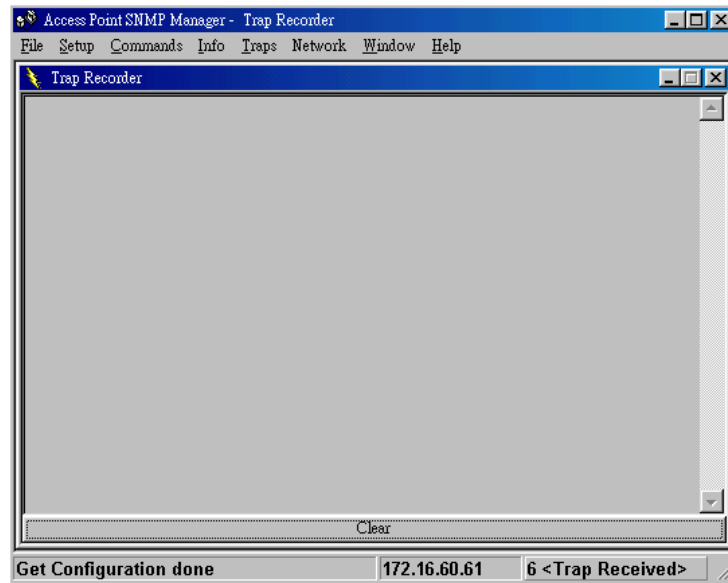
1. **Total Bytes:** Indicates the number of received bytes in the frames.
2. **Total Packets:** Indicates total number of received packets.
3. **Packet CRC Errors:** Indicates the number of packets with CRC Errors.

**Transmitted Packets:**

1. **Total Bytes:** Indicates the number of received bytes in the frames.
2. **Total Packets:** Indicates total number of transmitted packets.
3. **Packet CRC Errors:** Indicates the number of packets being transmitted with CRC Errors.

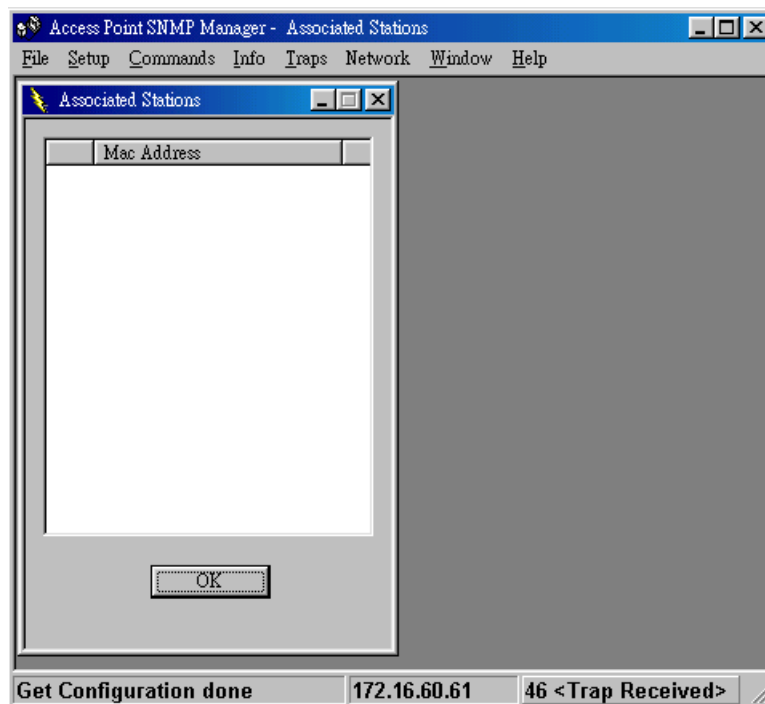
#### 4.2.6 Traps menu

- View Record: Provides additional information for every Trap Message.



#### 4.2.7 Network menu:

- Associated Stations: Provides MAC Addresses of the Associated stations with the LevelOne Access Point.



#### 4.2.8 Window menu

- Cascade: Windows been opened are positioned in a cascade fashion.
- Tile: All opened windows are visible on the desktop.

#### 4.2.9 Help menu: Provides on line help.

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## 5. Glossary

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BSS	‘Basic Service Set’. A set of 802.11-compliant stations that operate as a fully-connected wireless network.
Cell	Area in which the radio signal of an LevelOne Access Point is sufficiently good to join with it.
ESS	‘Extended Service Set’. A group of LevelOne Access Points with identical settings among which a client system can roam. An ESS forms the heart of WLAN
SNMP	Simple Network Management Protocol
WLAN	‘Wireless LAN’ the set of LevelOne Access Points and Wireless Clients that form a local area network.
WEP	‘Wired Equivalent Protection’ Data privacy mechanism based on a 64bit shared key algorithm, as described in the IEEE 802.11b standard
Shared Key Algorithm	Encryption scheme for which both sender and receiver need to know the (same) encryption key

## **More about Cells**

Each LevelOne Access Point in the network forms the center of a cell, or BSS. The Cells should overlap slightly to guarantee seamless wireless connectivity everywhere. Nearby LevelOne Access Points should preferably send and receive on different channels for maximum throughput.

Creating a cell plan for your site can be complicated, and is usually done by experts employing special measuring equipment.

Furthermore, the radio channels you may use depend on both the capabilities of the PC-Cards you are deploying, as well as the regulations in your area. The following table may be of help:

<b><u>Regulatory Domain</u></b>	<b><u>Area</u></b>	<b><u>Permissible Channels</u></b>	<b><u>Preferred channels</u></b>
FCC	United States	1 ~ 11	1, 6, 11
IC	Canada	1 ~ 11	1, 6, 11
ETSI	Europe except France	1 ~ 13	1, 7, 13
FRANCE	France	10 ~ 13	11
MKK	Japan	1 ~ 14	1, 7, 13



## 6. Technical Specifications

<b>Frequency range</b>	2.4G ~ 2.5Ghz
<b>Modulation technique</b>	DSSS(Direct Sequence Spread Spectrum) with DBPSK (1Mbps), DQPSK (2Mbps), and CCK (5.5 & 11 Mbps)
<b>Radio power</b>	+13~+17 dBm
<b>Data speed option</b>	11, 5.5, 2, 1 Mbps auto-selectable
<b>Supply voltage</b>	5V $\pm$ 5% dc
<b>Power consumption</b>	Run mode: Tx: 550mA (typical), Rx: 450mA (typical), Standby: 450mA (typical)
<b>Operating range</b>	Outdoor (line of sight): 200 meter Max@11Mbps Indoor: 35 to 100 meter Max@11 Mbps
<b>Standards</b>	IEEE 802.11b / IEEE802.3 / IEEE802.1d and Wi-Fi™ compliance
<b>PCBA Dimension</b>	60mm (W) * 95mm (L) * 1.5mm (T)
<b>Operational temperature range</b>	0°C to +60°C
<b>Operational Humidity range</b>	10% to 90%
<b>Storage temperature range</b>	-20°C to 70°C
<b>Operating System</b>	ThreatX RTOS inside; Support Windows™ 98SE, Me, 2K, XP subject to support without notify
<b>Management</b>	SNMP (MIB, traps), TFTP (firmware download), Set IP Session (arp/ping)
<b>Security</b>	64-bit and 128-bit WEP encryption
<b>Media access protocol</b>	CSMA/CA with ACK
<b>Antenna</b>	Internal diversity antenna directly soldered on AP PCB through the coaxial cable.