

Tube-U(ac) IEEE 802.11ac
Outdoor Wireless USB AP/CPE
with external antenna connector

User's Guide



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

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio 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 the 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.
- (2) This Device must accept any interference received, including interference that may cause undesired operation.

Federal Communication Commission (FCC) Radiation Exposure Statement

This equipment complies with FCC radiation exposure set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm (8 inches) during normal operation.

CE mark Warning

This is a class B device, in a domestic environment; this product may cause radio interference, in which case the user may be required to take adequate measures.

R&TTE Compliance Statement

This equipment complies with all the requirements of DIRECTIVE 1999/5/CE OF THE EUROPEAN PARLIAMENT AND THE COUNCIL OF 9 March 1999 on radio equipment and telecommunication terminal Equipment and the mutual recognition of their conformity (R&TTE). The R&TTE Directive repeals and replaces in the directive 98/13/EEC (Telecommunications Terminal Equipment and Satellite Earth Station Equipment) As of April 8, 2000.

Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this and of the computer manufacture must therefore be allowed at all times to ensure the safe use of the equipment.

EU Countries Intended for Use

The ETSI version of this device is intended for home and office use in Austria Belgium, Denmark, Finland, and France (with Frequency channel restrictions). Germany, Greece, Ireland, Italy, Luxembourg .The Netherlands, Portugal, Spain, Sweden and United Kingdom.

The ETSI version of this device is also authorized for use in EFTA member states Iceland, Liechtenstein, Norway and Switzerland.

WEEE regulation

To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

Contents

1.	Introduction	6
2.	Driver Installation	7
2.1	Windows 7	7
3.	Wireless Network Configuration	10
3.1	Utility Icon	10
3.2	Client Mode	10
4.	Access Point Mode	176
4.1	General Page	16
4.2	Advanced Page	17
4.3	Statistics Page	18

1. Introduction

Thank you for your purchase of the Outdoor Wireless USB CPE. Featuring wireless technology, this wireless networking solution has been designed for both large and small businesses, and it is scalable so that you can easily add more users and new network features depending on your business scale.

SYSTEM REQUIREMENTS

Windows System: XP 32/64, Vista 32/64, Win7 32/64, Win 8 32/64

PCs must have a device driver installed. It allows you to communicate with Outdoor Wireless USB CPE.

BEFORE YOU START

1. Contents confirmation

Outdoor Wireless USB CPE, Driver CD

CONNECTING YOUR Outdoor Wireless USB CPE to PC

2. Connect your Outdoor Wireless USB CPE to your PC after the driver installation.

2. Driver Installation

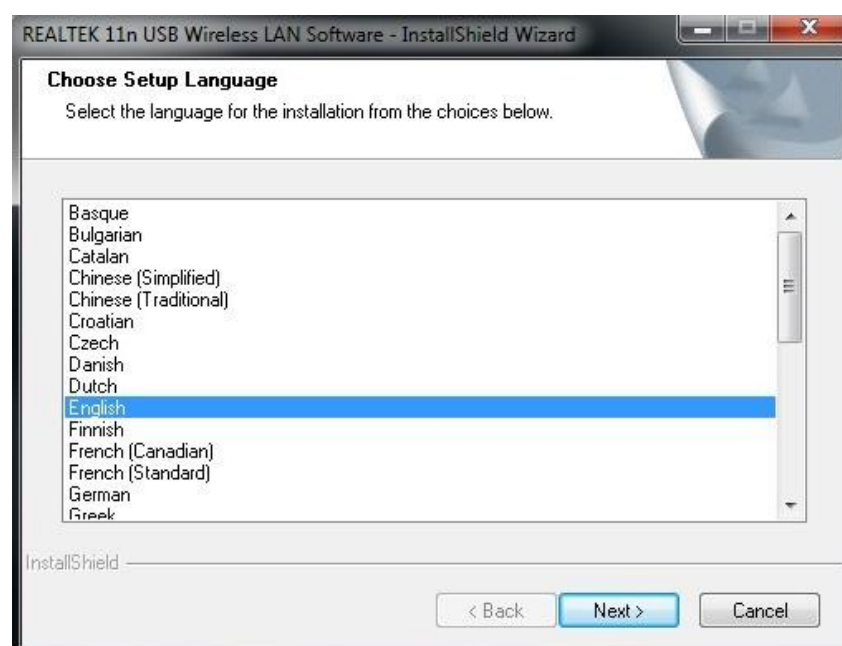
2.1 Windows 7

Notes: The following installation was operated under Windows 7. (Procedures are similar for Windows XP /vista)

Step 1:

Insert the installation CD into your CD-ROM. Browse disc content, and select appropriate model, and select the target operation system. Installation program will prompt language setup.

Choose the Setup Language you would like to use and click [Next](#) button



Step 2:

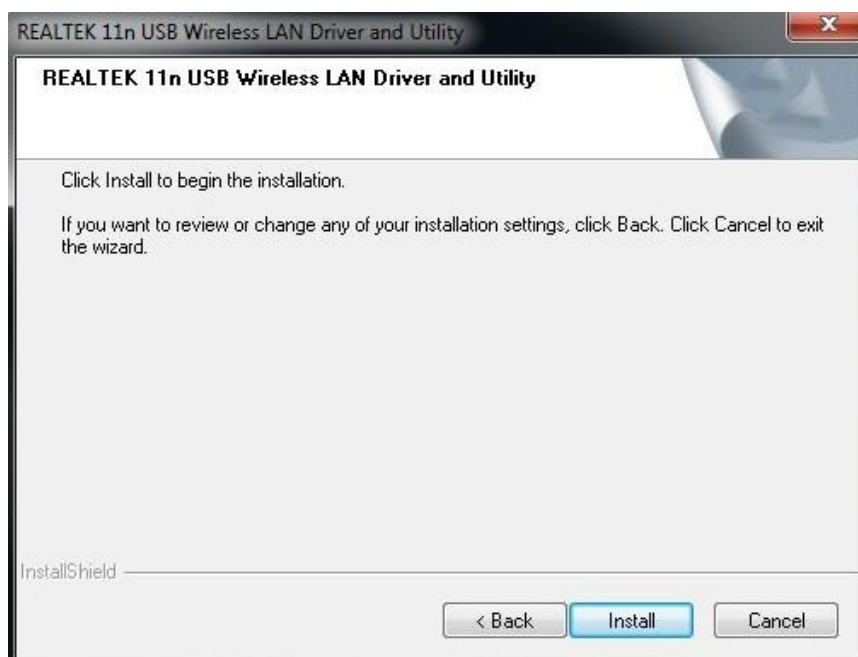
Welcome Installation dialog prompt shown.

Click **Next** to continue.

Click **Cancel** to close installation. Installing and configuring WLAN utility.

**Step 3:**

Click **Install**



Step 4:

Click Finish to complete installation.



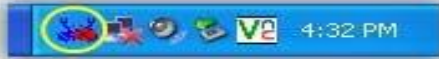
3. Wireless Network Configuration

The management software is provided for the Outdoor Wireless USB CPE.

When you insert the Outdoor Wireless USB CPE into your laptop or desktop, an icon should appear in the Windows System Tray automatically.

3.1 Utility Icon

Client mode utility running but no Outdoor Wireless USB CPE plugged.



Client mode utility running and Outdoor Wireless USB CPE scan available network.



Client mode utility running and Outdoor Wireless USB CPE can not scan any AP.



3.2 Client Mode

3.2.1 Wireless Device Control



Show Tray Icon – Show icon or not show icon in stray.

Radio Off – Stop wireless signal.

Disable Adapter – Stop wireless device.

Virtual WiFi allowed Windows operating system control switch

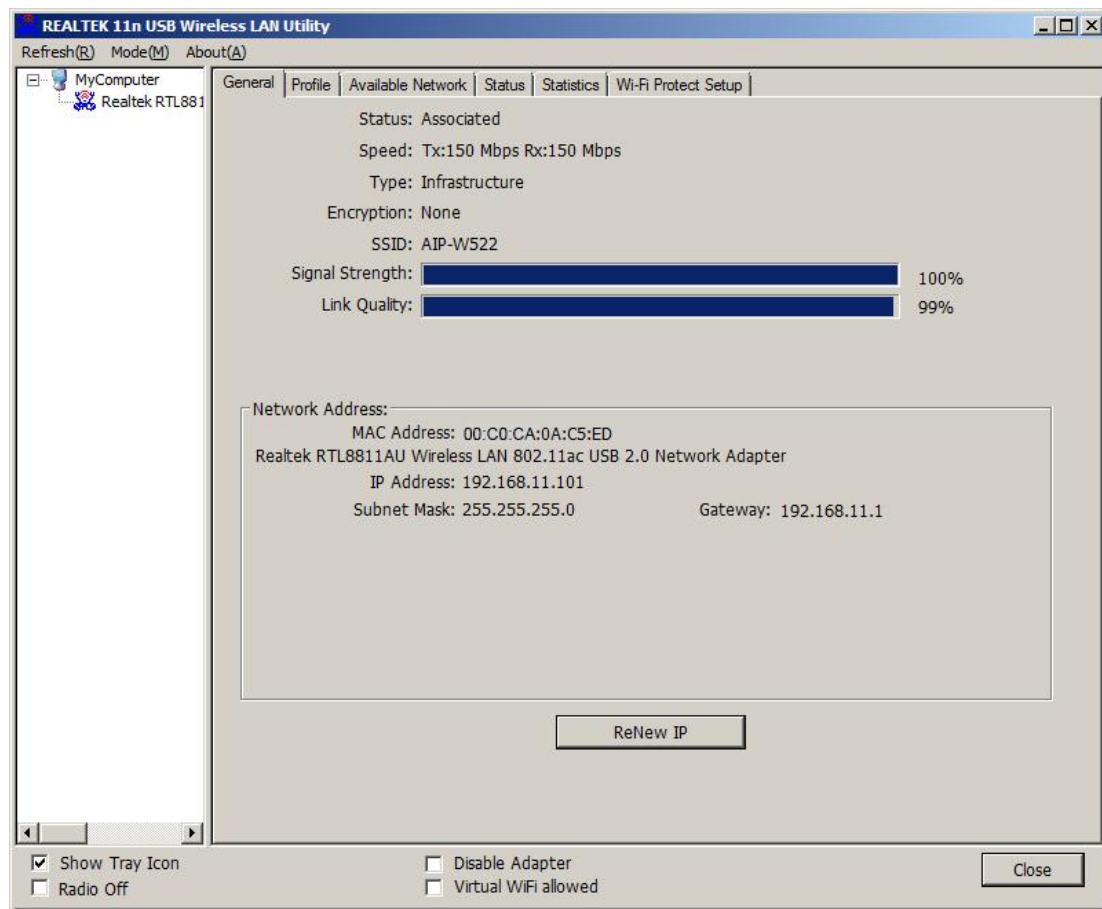
3.2.2 General Setting

Once device is set, double click on that icon and the configuration window will pop up as shown. It shows the current connected network. The signal strength and link quality are displayed also. The bar graph displays the quality and strength of the link between the node and its Access Point. Link Quality is a measurement of receiving and transmitting performances over the radio.

[Network Address](#) displays current MAC Address, IP Address, and Subnet, and Gateway.

Click [Renew IP](#) button to refresh IP address leased from wireless AP.


TX the POWER adjustable RF output power



3.2.3 Profile Setting

In profile tab, you can [Add](#), [Remove](#), [Edit](#), [Duplicate](#) and [Set Default](#) to manipulate profile content manually. Strongly recommend to use profile after you do [Available Network](#).

The screenshot shows a web interface for profile management. At the top, there are five tabs: 'General', 'Profile', 'Available Network', 'Status', and 'Wi-Fi Protect Setup'. The 'Profile' tab is currently active. Below the tabs, the main area is titled 'Available Profile(s)'. It contains a table with two columns: 'Profile Name' and 'SSID'. The table has one row with a profile icon, the name '2.4GHz', and the SSID '2.4GHz'. To the right of the table, there are five buttons: 'Add', 'Remove', 'Edit', 'Duplicate', and 'Set Default'. At the bottom of the table area, there is a scrollbar.

Profile Name	SSID
 2.4GHz	2.4GHz

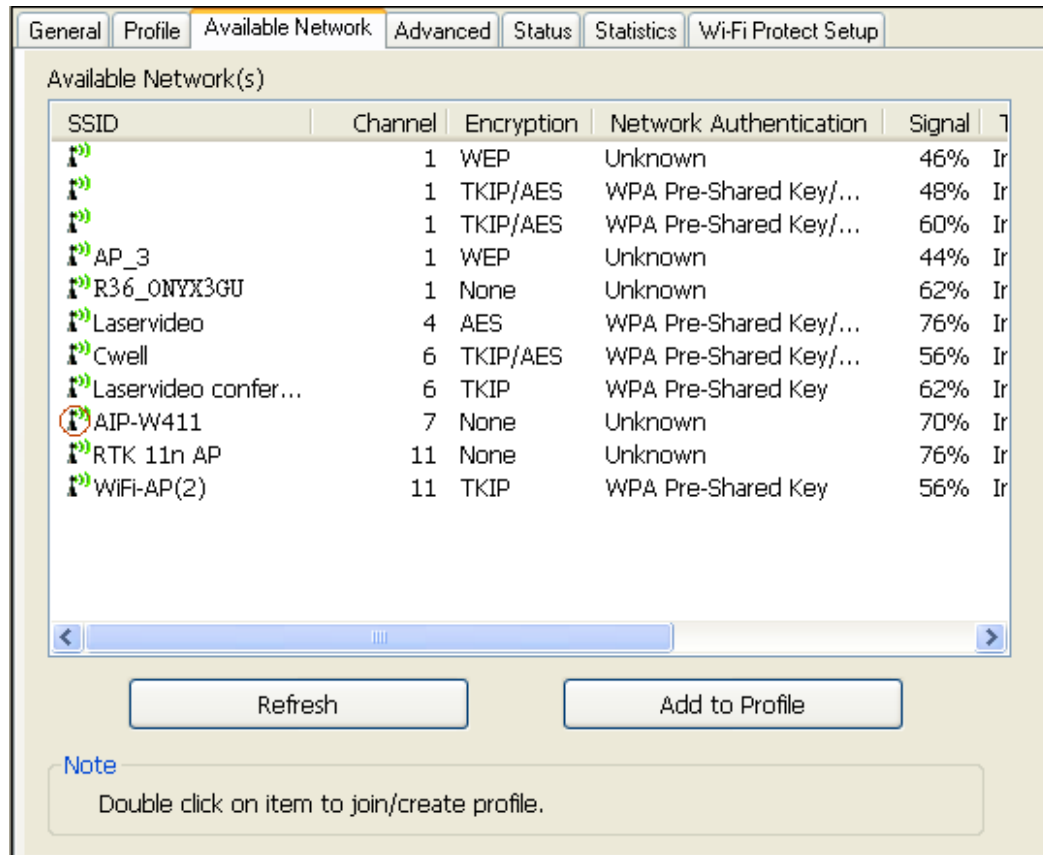
Buttons: Add, Remove, Edit, Duplicate, Set Default

3.2.4 Available Network Setting

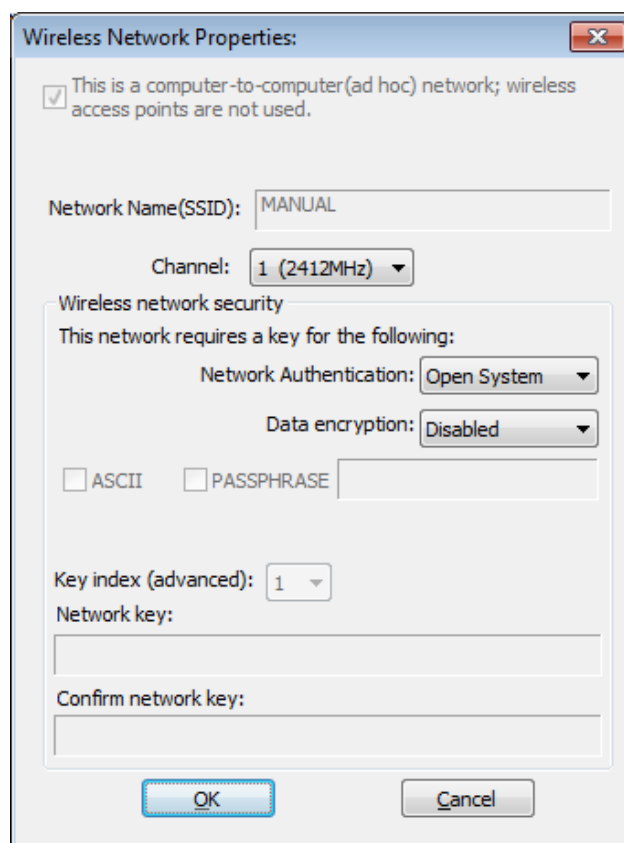
Click [Available Network](#) tab and it will show all available networks that radio can reaches. Select proper SSID & BSSID you want to connect.

Click [Refresh](#) button to force and rescan available networks currently.

Select one of SSIDs, and click [Add to Profile](#) to create profile that can be configured more wireless parameters.



In this page, you can edit your profile name; configure wireless security like WEP, WPA, WPA2, 802.1x ...etc. After finishing setup, click **OK** button to save configuration.



The image shows a 'Wireless Network Properties' dialog box. At the top, there is a checkbox labeled 'This is a computer-to-computer(ad hoc) network; wireless access points are not used.' which is checked. Below this, the 'Network Name(SSID):' field contains the text 'MANUAL'. The 'Channel:' dropdown menu is set to '1 (2412MHz)'. A section titled 'Wireless network security' contains the text 'This network requires a key for the following:'. Below this, 'Network Authentication:' is set to 'Open System' and 'Data encryption:' is set to 'Disabled'. There are two checkboxes, 'ASCII' and 'PASSPHRASE', both of which are unchecked. The 'Key index (advanced):' dropdown is set to '1'. There are two empty text input fields labeled 'Network key:' and 'Confirm network key:'. At the bottom, there are 'OK' and 'Cancel' buttons.

Wireless Network Properties: ✕

☒ This is a computer-to-computer(ad hoc) network; wireless access points are not used.

Network Name(SSID):

Channel:

Wireless network security

This network requires a key for the following:

Network Authentication:

Data encryption:

☐ ASCII ☐ PASSPHRASE

Key index (advanced):

Network key:

Confirm network key:

3.2.5 Status

In this page, it shows all wireless, networking and device driver version in details.

General	Profile	Available Network	Advanced	Status	Statistics	Wi-Fi Protect Setup
Manufacturer				REALTEK		
NDIS Driver Version				1012.1.131.2011		
Short Radio Header				Yes		
Encryption				Disabled		
Authenticate				Open System		
Channel Set				WORLD WIDE		
MAC Address				00:00:CA:53:B9:3F		
Data Rate (AUTO)				Tx:120 Mbps Rx:120 Mbps		
Channel (Frequency)				7 (2442 MHz)		
Status				Associated		
SSID				AIP-W411		
Network Type				Infrastructure		
Power Save Mode				None		
Associated AP MAC				00:00:CA:5F:0D:90		
Up Time (hh:mm:ss)				0:05:33		

3.2.6 Wi-Fi Protected Setup

There is an easy and secure setup solution for Wi-Fi network. You can choose PIN Code or Push Button method to connect to an AP.

General	Profile	Available Network	Status	Wi-Fi Protect Setup
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Wi-Fi Protected Setup (WPS)
An easy and secure setup solution for Wi-Fi network

Role Selection
☒ As WPS Device

Pin Input Config (PIN)
After pushing the PIN button. Please enter the PIN code

PIN Code : 98752614

Pin Input Config (PIN)

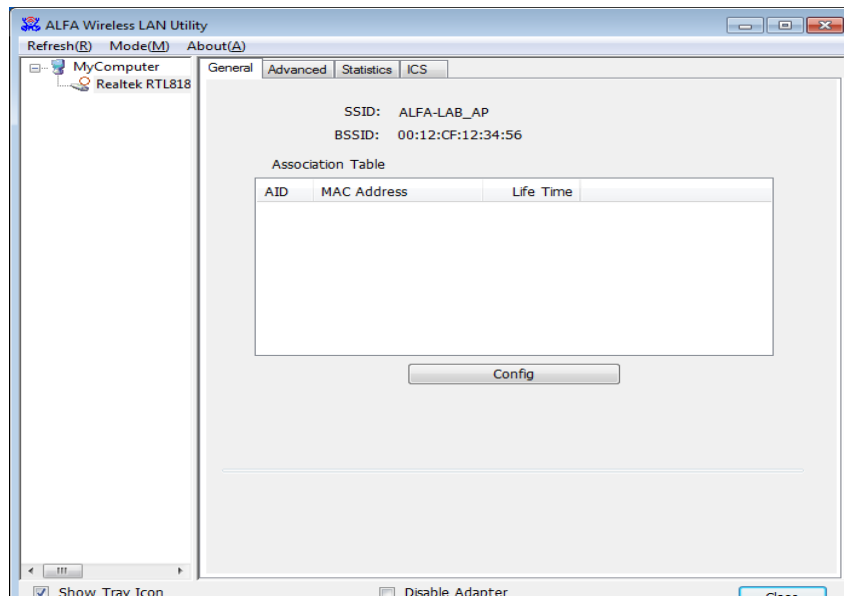
Push Button
After pushing the PBC button. Please push the physical button on your AP or visual button on the WPS config page.

Push Button Config (PBC)

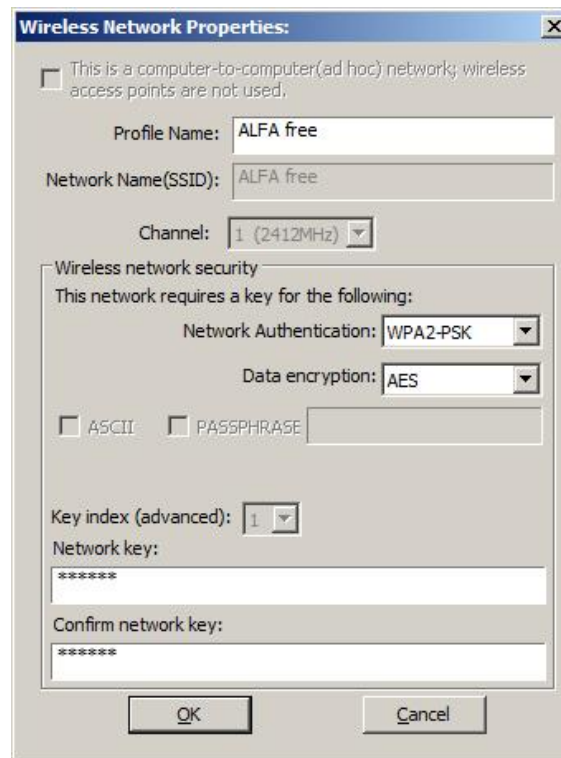
4. Access Point Mode

4.1 General Page

This page provides general information of this AP, including name, MAC address and list of joined stations.



1. SSID: The name of this AP.
2. BSSID: Six two-digit numbers of the MAC address of this AP.
3. Association Table: It is the list of joined stations to this AP.
4. AID (Association ID):
The AID field is a value assigned by an AP during association that represents 16-bit ID of a station. It is a unique value assigned by AP.
5. MAC address:
It is the six two-digit numbers that assemble the MAC address of respected joined station.
6. Life Time:
It is the timer that counts down from 10 minutes whenever the AP connects the station successfully. If an STA associated to SW AP does not have any interaction with the AP in 10 minutes, it will be disassociated from the Infra-structure BSS.
7. Config: A dialog of this AP is shown for configuration modification.
8. ICS:
Internet Connection Sharing.
It enables this AP to create the domain to share this internet/intranet network connection.



- a. Network Name (SSID):
The name of the AP is searchable by other wireless nodes. The length of SSID should be shorter than 32 characters.
- b. Channel: Select the wireless channel within current channel plan.
- c. Network Authentication & Data Encryption :
 - Open System:
It is combined with data encryption type to be WEP or to be disabled. Disabled: you decide to open this AP to every one without network authentication. WEP: you decide to setup the basic data encryption with a defined network key.
 - Shared Key + WEP:
You decide to apply both authentication and data encryption to prevent unauthorized login.
 - WPA-PSK + TKIP & WPA2-PSK + TKIP:
The most advanced authentication and data encryption that provide the best security protection.
- d. ASCII / PASSPHRASE:
 - ASCII:
You should provide either 5 or 13 ASCII characters on Network key edit box.
 - PASSPHRASE: You could input words on Network
 - Key edit box:
64 bits: The generated pass key is 64-bit to be complied with data packets. 128 bits: The generated pass key is 128-bit to be complied with data packets.
 - Hexadecimal:
While both ASCII and PASSPHRASE are not checked, you should input hexadecimal number in the network key box. For example, 10 digits hex number for 64-bit WEP or 26 digits hex number for 128-bit WEP.
- e. Key index (advanced) (1 ~4):
At most four key index to represent the opposite network key.

4.2 Advanced Page

Users could setup the advanced characteristics of network packet for transmission on this page.

The screenshot shows a web interface for configuring the device. At the top, there are three tabs: 'General', 'Advanced', and 'Statistics'. The 'General' tab is active. Below the tabs, the 'General' section is visible. It contains three configuration items: 'Beacon Interval' with a text input field containing '100', 'DTIM Period:' with a text input field containing '3', and 'Preamble Mode' with a dropdown menu showing 'Short'. At the bottom of the configuration area, there are two buttons: 'Set Defaults' and 'Apply'.

1. Beacon Interval:
This field indicates the interval between each beacon that this AP sends out in unit of TU (1024 micro-seconds).
2. DTIM Period:
The DTIM Period field is the number of Beacon intervals between successive DTIMs.
3. Preamble Mode:
 - Long: higher quality but with lower performance than preamble short mode.
 - Short: Normal quality but with higher performance than preamble long mode.
 - Auto: select the proper preamble mode by current signal frame information.

4.3 Statistics Page

The Tx/Rx status of current wireless connection is shown. A statistic analysis of packet transition is listed.

Counter Name	Value
Tx OK	146
Tx Error	0
Rx OK	0
Rx Packet Count	0
Rx Retry	0
Rx ICV Error	0

Reset