

**AL2230S\_ZD1211B**  
**802.11 b/g WLAN mini-card**

**User Manual**

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## 1. How to Install ZD1211B-QF-F driver and ZDWlan Utility:

### 1.1 Install: Phase 1

- 1.1.1 Copy the driver package (ex: 1211USB\_Install\_4214.exe) to any directory of NoteBook (or PC). The 1211USB\_Install\_4214.exe can be used at ZD1211B-QF-F Chip Set Only. It can be run on the Win98, WinME, Win2000 or WinXP OS.



Figure 1-1

- 1.1.2 Click the package "1211USB\_Install\_4116.exe" then appear the installation page shown as "Figure 1-1".

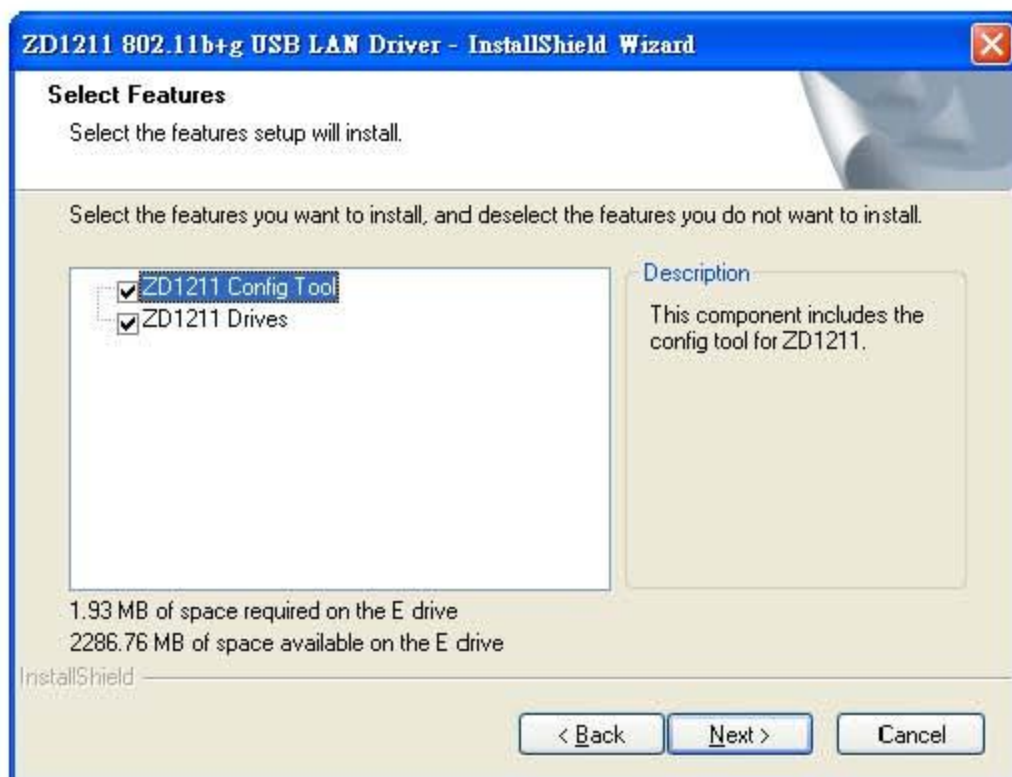


Figure 1-2

- 1.1.3 Press the “next” icon of Figure 1-1, then the page shown as “Figure 1-2”.  
Select “ZD1211 Config Tool” or “ZD1211 Diver” or all of them to install  
by checking the items.



Figure 1-3

- 1.1.4 Press the “**next**” icon of Figure 1-2, then the page shown as “Figure 1-3”. Press the “**Continue Anyway**” button of Figure 1-3, to finish the first phase installation.
- 1.1.5 After finishing the phase 1 installation of the driver, the NoteBook (or PC) with Win98 or WinME OS shall be restarted, but Win2000 or WinXP OS doesn't need to be restarted.

## 1.2 Install: Phase 2



Figure 1-4

- 1.2.1 Insert the Wireless Card to slot of NB, then appear the installation page shown as “Figure 1-4”.

For installing the driver automatically, please check the automation item.



Figure 1-5

- 1.2.2 When the automation item of "Figure 1-4" is selected, press "Next" button of the page, then the "Hardware Installation" page shown as "Figure 1-5".



Figure 1-6

- 1.2.3 Press the “Continue Anyway” button of Figure 1-5, then the page “Found New Hardware Wizard” shown as “Figure 1-6”.
  - Press the “Finish” button of “Figure 1-6” to finish the package installation.



## 2. How to use the ZDWlan Utility: ( Station)

2.1 If you use the WinXP OS , the “Zero Configuration” of WinXP will be disable first , then ZDWlan Utility can be used.

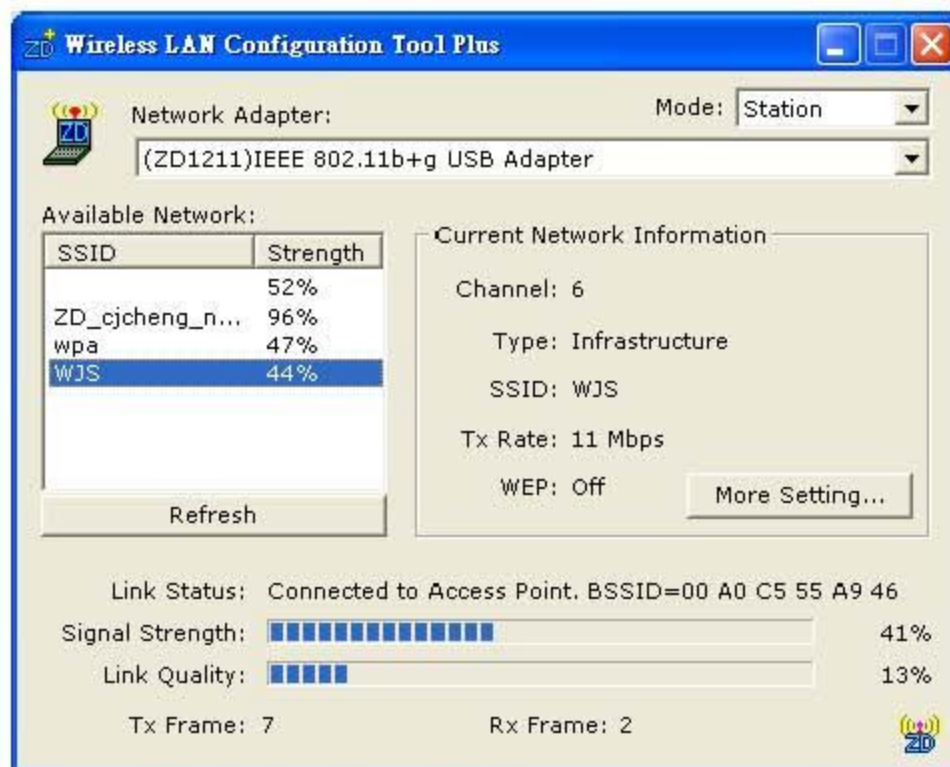


Figure 2-1

2.2 Open the ZDWlan Utility from “ Start menu bar \Program List \ ZyDAS 1211 Tool “. The Window is shown as “Figure 2-1”.

The adapter can be set at “Station” or “Access Point” Mode from the Mode drop down menu. Station mode is selected for the item.

- You can site survey the neighboring SSID site by pressing the “Refresh”, then sites name and signals strength of available SSID sites are shown on the “Available Network” field.
- Double click the SSID site from “Available Network” field, and the SSID can be connected directly.
- The information of the SSID is shown on the “Current Network



**Information”.**

- Show the BSSID of connecting AP on the “**Link Status**” filed.
- “**Signal Strength**” and “**Link Quality**” shown on diagrammatic curve, and described with percentage.
- Record the number of Tx frames on the filed of “**Tx Frame**”.
- Record the number of Rx frames on the filed of “**Rx Frame**”.

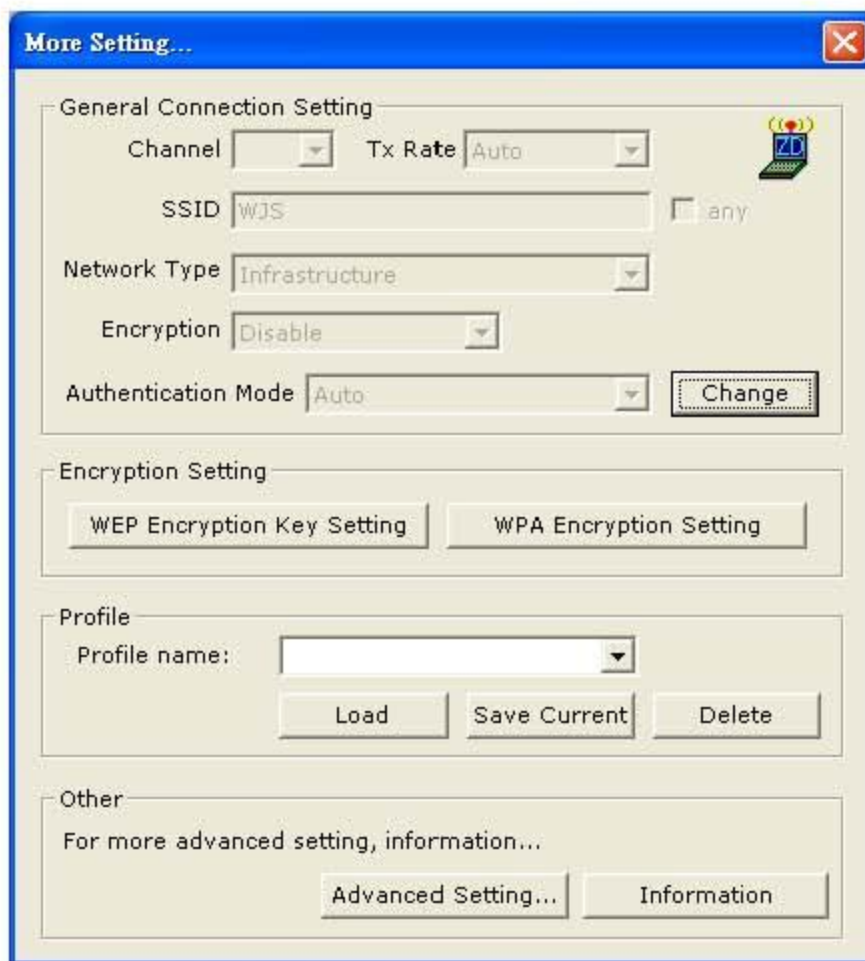


Figure 2-2

2.3 Click "More Setting" icon of Figure 2-1 to enter "More setting" window. The window is shown as "Figure 2-2".

2.3.1 "General Connection Setting" group:

- Read the current status from the group if the "Change" button is not pressed.
- Press "Change" button for modifying the status, when the modification is finished, press "Apply" to save it. The button "Change" and "Apply" is alternately shown on the same position.
- Modify the SSID name from the "SSID" field. When use the item, the "any" will be unchecked previously.
- Change the channel by drop down menu "Channel". When use the item, the Ad\_Hoc Mode will be set previously.
- Select the transmission rate by "Tx Rate" drop down menu.

- Select the “Ad\_Hoc” or “Infrastructure” Mode by the “Network Type” drop down menu.
- Select the “Enable WEP” or “Disable WEP” by the “Encryption” drop down menu.
- Select the “Open System”, “Shared Key” mode or “Auto” from the “Authentication Mode” drop down menu.

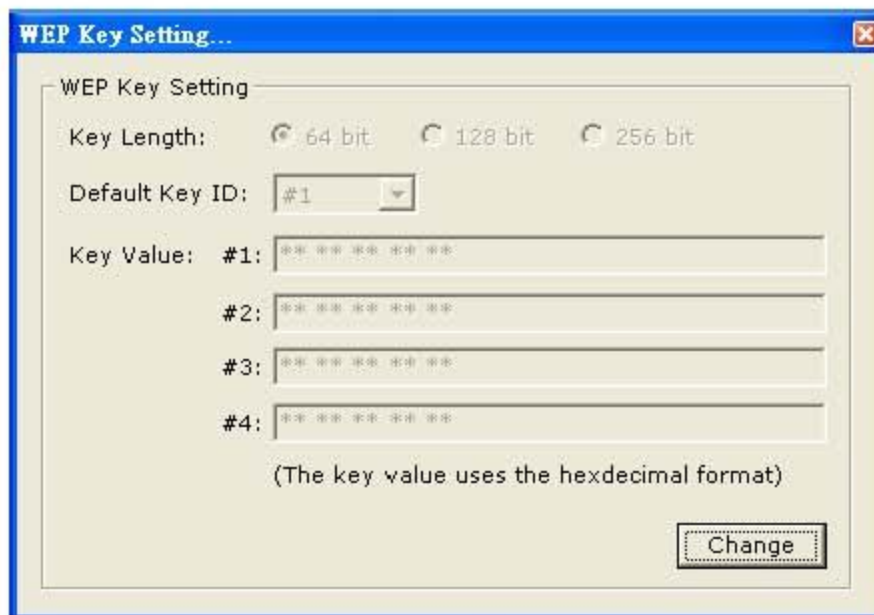


Figure 2-3

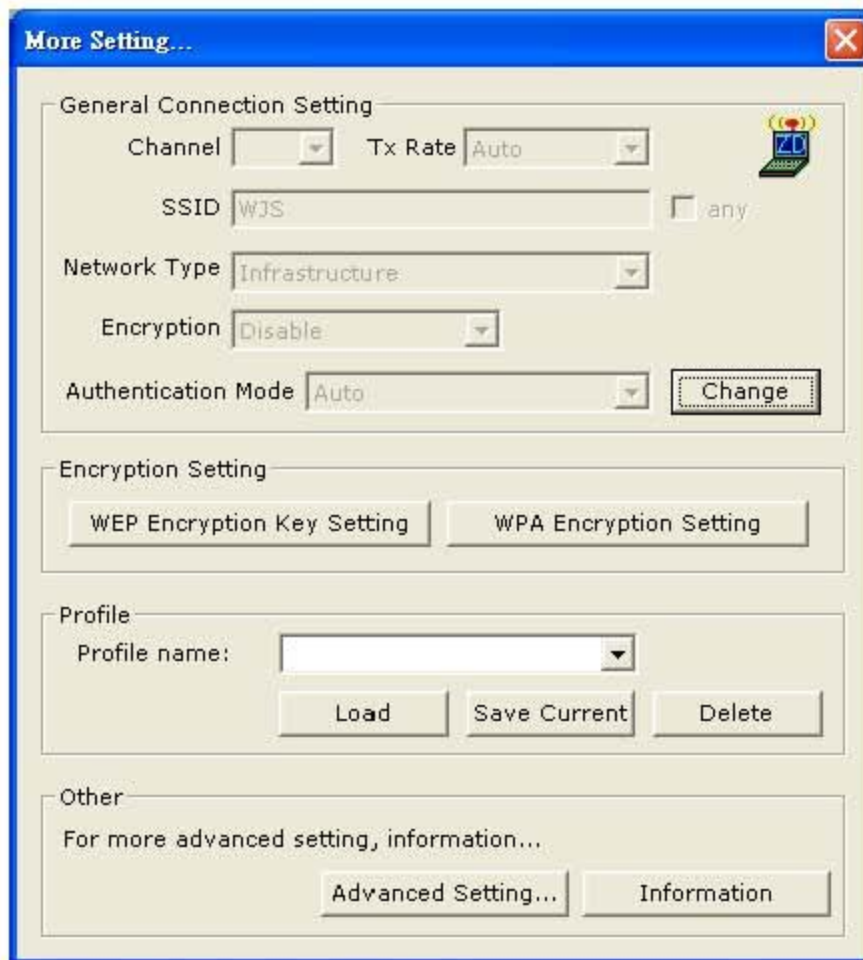


Figure 2-4

### 2.3.2 Encryption Setting :

2.3.2.1 Press “WEP Encryption Setting” to enter the “WEP Key Setting” page shown as Figure 2-3.

- Select the “Open System” , “Shared Key” mode or “Auto” from the “authentication Mode” drop down menu.
- Press the “Change” button to modify the contents of “WEP Key setting”, when it is finished, press “Apply” to save it. The button “Change” and “Apply” is alternately shown on the same position.
- Select which key length 64,128 or 256 bits will be modified or used by “Key Length” item.
- Select which key set will be use by the field of “Default Key ID”  
Modify the 4 sets key depending on the selected key length on the field of “Key Value”. The key value is used the hexadecimal format.



- Select which key format “hexadecimal” or “ASCII” will be used from the “**Key Format**” .

2.3.2.2 Press “**WPA Encryption Setting**” to enter the “**WPA Setting**” page shown as Figure 2-4.

- You can select the WPA authentication protocol “**TLS**” , “**PEAP**” or “**TTLS**” from “**Protocol**” filed.
- “**TLS**” Setting: you don’t fill out the **User name** and **Password** field, but the **Certificate** need to be used. When apply the setting, the “WPA Setting page” must be closed.
- “**PEAP**” Setting: The **User name**, **Password** and **Certificate** are needed. When apply the setting, the “WPA Setting page” must be closed.
- “**TTLS**” Setting: The **User name**, **Password** and **Certificate** are needed, and you must select the phase 2 authentication type (PAP, CHAP, MSCHAP, MSCHAPv2) from the “ Phase2Auth” drop down menu. When apply the setting, the “WPA Setting page” must be closed.
- If you select “**pre-share-key**” protocol , you can write down your password on the filed of “**Passphrase**” , the password length can be selected from 8 bytes to 63 bytes (ASCII format) depend on user . When apply the setting, the “WPA Setting page” must be closed.

2.3.3 “**Profile** ” group:

- Select the profile that has been saved previously from the “**Profile name**” drop down menu, then press “**Load** ” button to load the status to use.
- Write the profile name on the field of “**Profile name**”, and press the “**Save Current**” button to save the current status on the profile.
- Select the profile name that wanted to delete from the “**Profile name**” drop down menu, and press “**Delete**” button to delete it

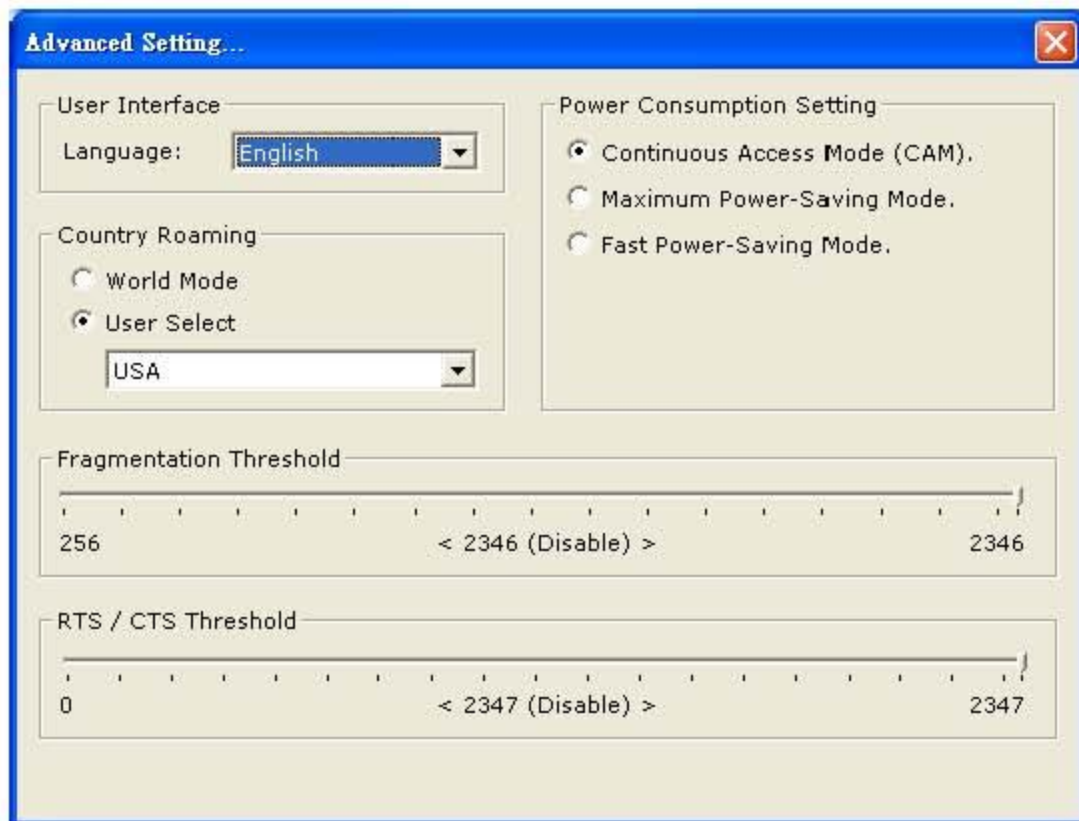


Figure 2-5

#### 2.2.4 “Other” group:

Press the “**Advanced Setting**” button, then the Advanced Setting page is shown as Figure 2-5.

- Select the Window User Interface by the “**Language**” down drop menu. If the **English** item is selected, all functions of window are described with English. Select the **Traditional Chinese** item, and they are described with Traditional Chinese.
- At “**Power consumption Setting**” group, select which power save level want to be set by checking CAM Mode, Maximum Power-Saving mode or Fast Power-Saving mode. The default is CAM mode. If the most save mode want to use, select the Maximum Power-Saving mode, but it throughput is lower than CAM and Fast Power-Saving mode. The throughput of “**Fast Power-Saving mode**” is better than “**Maximum Power-Saving mode**”, but its power save is less than “**Maximum Power-Saving mode**”.
- At “**Country Roaming**” group, the default depends on the region of



EEPROM. Select other region from “**User Select**” drop down menu, or check “**World Mode**” item to set it to the word mode. When the word mode is set, it depends on the behavior of AP. If the WLAN card is re-plug , the setting will return to default setting.

- At “**Fragmentation Threshold**” bar, drop and move cursor to set the fragmentation threshold point, the range is from 256 to 2346 bytes.
- At “**RTS / CTS Threshold**” bar, drop and move the cursor to set the RTS threshold point, the range is from 0 to 2347 bytes.

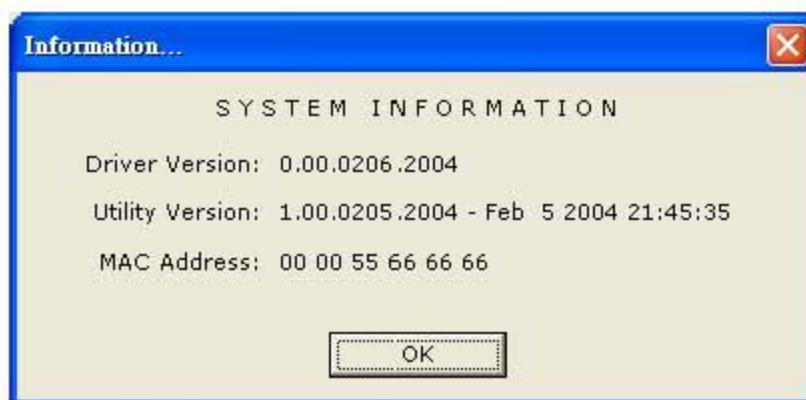


Figure 2-6

- 2.2.5 Press the “**Information**” button to enter the “**Information**” page shown as Figure 2-6. It includes the Driver version, Utility Version and MAC Address.

### 3. How to use the ZDWlan Utility: ( Soft Access Point)

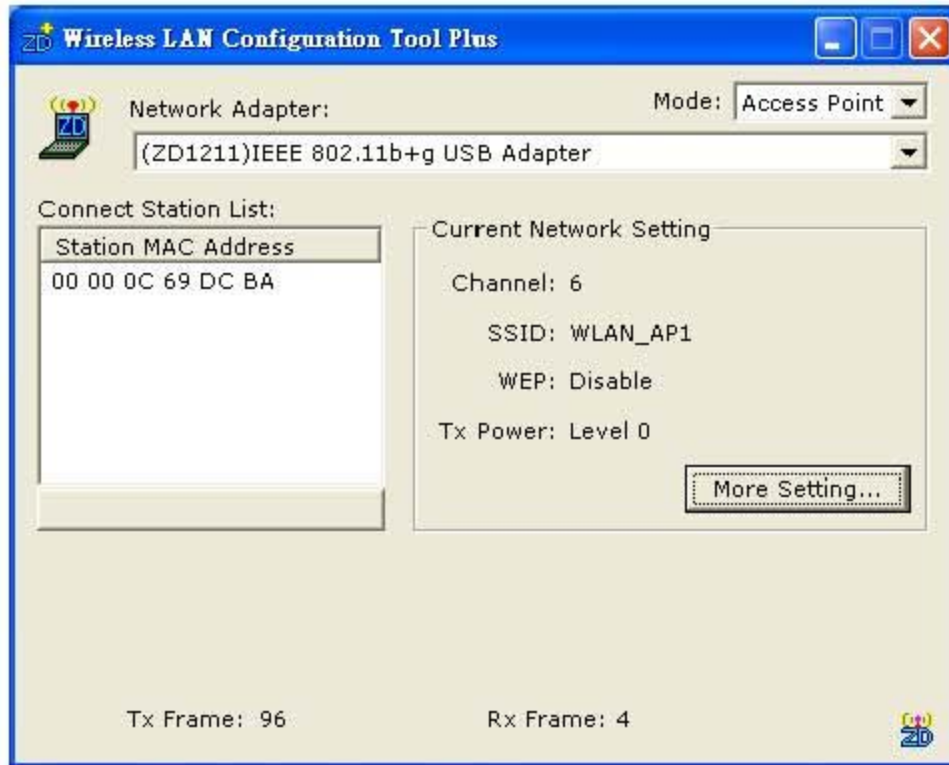


Figure 3-1

3-1 Open the ZDWlan Utility from “ Start menu bar \Program List\ ZyDAS 1211 Tool “. The Window is shown as “Figure 2-1”. For the soft AP, please option the “ **Access Point**” from drop down menu Mode filed, and it is shown as Figure 3-1.

- “ **Network Adapter**” shows the available WLAN card for soft AP.
- If the WLAN stations link to the Soft AP , their MAC address will be shown on the filed of the “ **Station MAC Address**”.
- The current status of the AP is shown on the “ **current Network Setting**”. It can show which **Channel** is used, and what is the AP’s **SSID**. You can know if the **WEP** is disable or enable. The **Tx power level** is shown on it too (The is function not available now).
- The **Tx Frame** shows how many frames transmitted by the soft AP.
- The **Rx Frame** shows how many frames received by the soft AP.

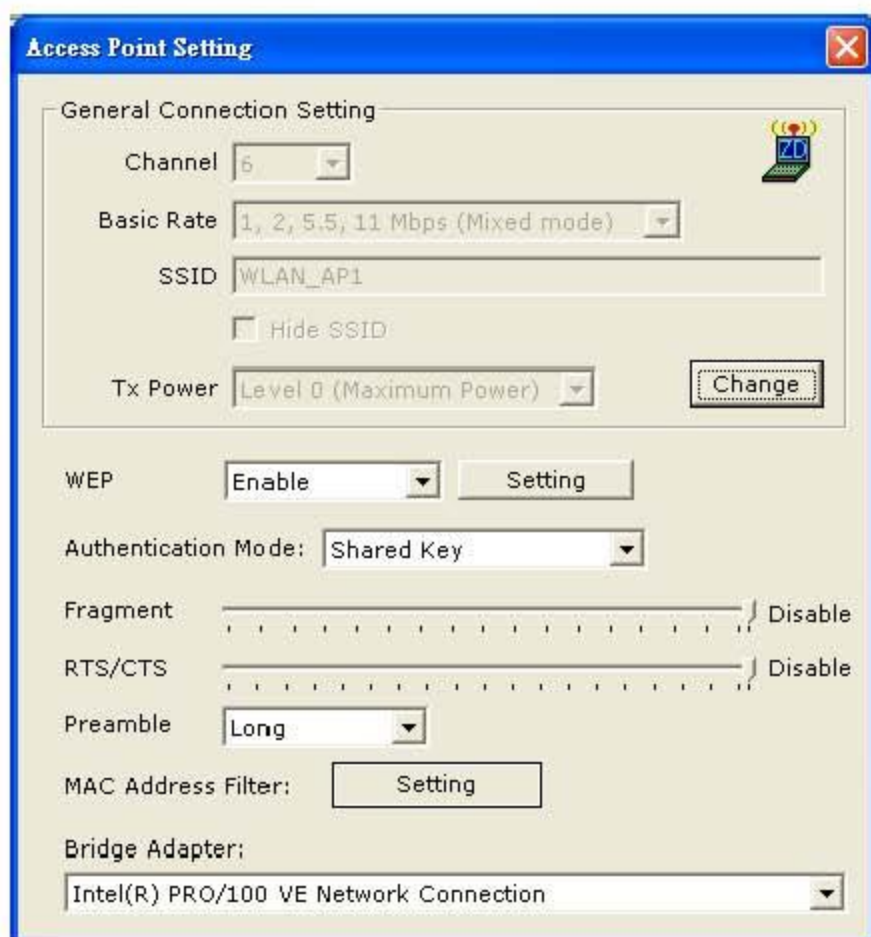


Figure 3-2

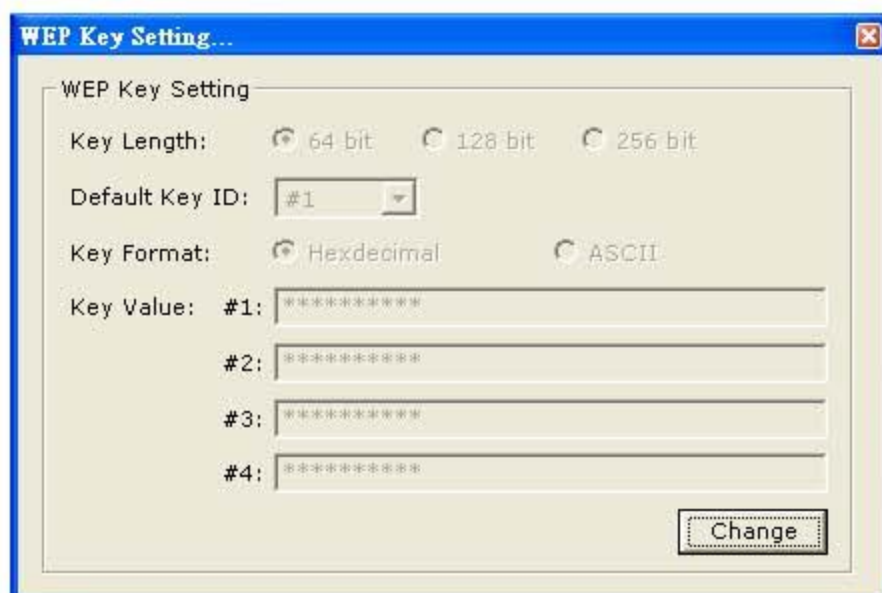
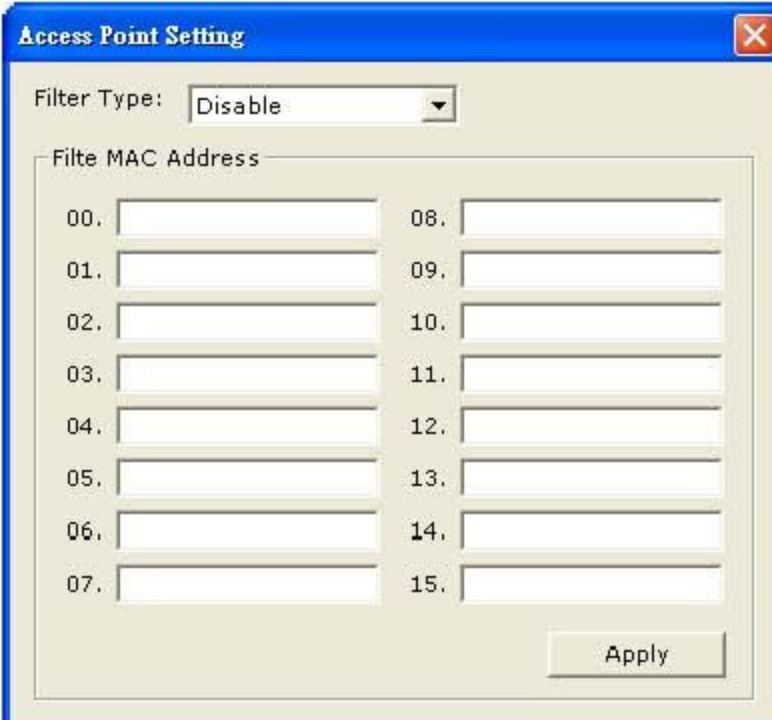


Figure 3-3



The image shows a Windows-style dialog box titled "Access Point Setting". At the top, there is a "Filter Type:" label followed by a dropdown menu currently set to "Disable". Below this is a section titled "Filter MAC Address" which contains a grid of 16 input fields for MAC address octets, numbered 00 through 15. The fields are arranged in two columns: 00-07 on the left and 08-15 on the right. At the bottom right of the dialog is an "Apply" button.

Figure 3-4

3-2 Click “**More Setting**” icon of Figure 3-1 to enter “**More setting**” window. The “**Access Point Setting**” page is shown as “Figure 3-2”.

- Press the “**Change**” button to modify the “**General Connecting Setting**”, and press the “**Apply**” button, when the setting is finished. The button “**Change**” and “**Apply**” is alternately shown on the same position.
- Select the channel from the drop down menu “**Channel**”.
- The drop down menu “**Basic Rate**”, **ACK rate**, can select four sets of basic rates: set 1 {1, 2 Mbps (Mixed mode)}, set 2 {1, 2, 5.5, 11 Mbps (Mixed mode)}, set 3 {1, 2, 5.5, 11, 6, 12, 24 Mbps (802.11g only)}, and set 4 {6, 12, 24 Mbps (802.11g only)}. A 802.11b station can connect to the AP only when the setting is set 1 or set 2. A 802.11g station is not limited.
- Modify the SSID name from the “**SSID**” filed.
- Check the “**Hide SSID**” to hide the SSID that means the WLAN station can’t site survey the AP’s SSID.
- There are 4 sets transmit power level can be selected on the “**Tx power**” filed. (The function is not available now.)
- Enable or Disable the WEP form the drop down menu “**WEP**”.



- Press the “**Setting**” button to open the “**WEP key setting**” shown as Figure 3-3. Press the “**Change**” button to modify the contents of “**WEP Key setting**”, when it is finished, press “**Apply**” to save it. The button “**Change**” and “**Apply**” is alternately shown on the same position. Select which key length 64,128 or 256 bits will be modified or used by “**Key Length**” item. Select which key set will be use by the field of “**Default Key ID**”. Modify the 4 sets key depending on the selected key length on the field of “**Key Value**”. The key value is used the hexadecimal format. Select which key format “**hexadecimal**” or “**ASCII**” will be used from the “**Key Format**”.
- Select the “**Open System**” or “**Shared Key**” mode from the “**authentication Mode**” drop down menu.
- At “**Fragment**” bar, drop and move cursor to set the fragmentation threshold point, the range is from 256 to 2346 (Disable) bytes.
- At “**RTS / CTS**” bar, drop and move the cursor to set the RTS/CTS threshold point, the range is from 0 to 2347(Disable) bytes.
- Select the Long preamble or Short preamble from the “**Preamble**” drop down menu.
- Press the “**Setting**” button of “**MAC Address Filter**” to fill the MAC addresses that will be accepted or filtered. It’s shown as Figure 3-4. Select “Disable” or “Accept” or “Filter” from the filed of drop menu “**Filter Type**”. There are 16 sets MAC addresses can be filled on the “Filter MAC Address”. If all setting is finished, please press **Apply** to save it.
- Select the NIC card for bridge function from the filed of drop menu “**Bridge Adapter**”. If the bridge function will be disable, please select the “ No bridge” item from “**Bridge Adapter**”.

# 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 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.

FCC Caution: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

### IMPORTANT NOTE:

This module is intended for OEM integrator. The OEM integrator is still responsible for the FCC compliance requirement of the end product which integrates this module.

20cm minimum distance has to be able to be maintained between the antenna and the users for the host this module is integrated into. Under such configuration, the FCC radiation exposure limits set forth for an population/uncontrolled environment can be satisfied.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

### USERS MANUAL OF THE END PRODUCT:

In the users manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied. The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment. If the size of the end product is smaller than 8x10cm, then additional FCC part 15.19 statement is required to be available in the users manual: 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 and (2) this device must accept any interference received, including interference that may cause undesired operation.

### LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains TX FCC ID: UOW-AL2230S". If the size of the end product is larger than 8x10cm, then the following FCC part 15.19 statement has to also be available on the label: 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 and (2) this device must accept any interference received, including interference that may cause undesired operation.



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## IC Waring

"Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device."

"To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that required for successful communication"

"This device has been designed to operate with an antenna having a maximum gain of **2.3** dBi. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms."

"To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication."

### IMPORTANT NOTE:

#### IC Radiation Exposure Statement:

This equipment complies with IC RSS-102 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.

OEM integrator is still responsible for testing their end product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

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

product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate IC authorization.

**End Product Labeling :**

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: “Contains TX IC:6777A-AL2230S

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

Country Code selection feature to be disabled for products marketed to the US/CANADA

## NCC Warning

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

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

「本模組於取得認證後將依規定於模組本體標示審驗合格標籤，並要求平台廠商於平台上標示「本產品內含射頻模<sup>®</sup> CC XX xx YY yyy Z z W」字樣」。

「本公司於說明書中提供所有必要資訊以指導使用者/安裝者正確的安裝及操作」。

「5.25-5.35 GHz 頻帶內操作之無線資訊傳輸設備，限於室內使用」。