Wireless N 150 USB Adapter

KEEBOX W150NU

User 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 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.

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.

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

IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 11.

IMPORTANT NOTE:
FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. To maintain compliance with FCC RF exposure compliance requirements, please follow operation instruction as documented in this manual.

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

SAR compliance has been established in typical laptop computer(s) with USB slot, and product could be used in typical laptop computer with USB slot. Other application like handheld PC or similar device has not been verified and may not compliance with related RF exposure rule and such use shall be prohibited.

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Product Overview

Package Contents

- Wireless N 150 USB Adapter
- Installation Guide

System Requirements

Computer

- CD-ROM Drive
- Available USB 2.0 port
- Windows 2000 (Service Pack 4), Windows XP (Service Pack 2), Windows Vista, or Windows 7

Network

- 802.11n or 802.11g Wireless Access Point or Router

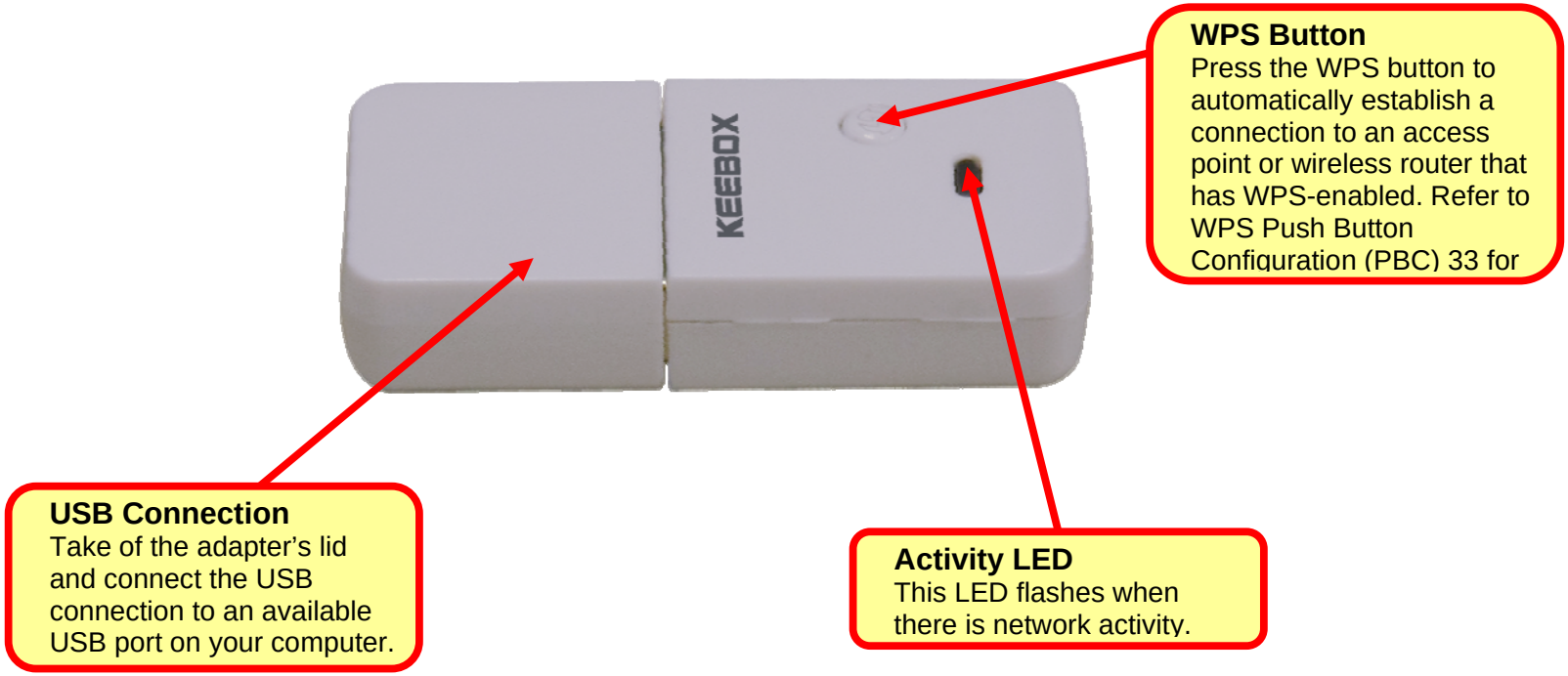
Introduction

The Wireless N 150 USB adapter provides a convenient method for connecting a PC or notebook to a wireless network.

Features

- Compatible with IEEE 802.11n draft standard to provide a wireless data rate of up to150Mbps
- Compatible with IEEE 802.11g standard to provide a wireless data rate of up to 54Mbps
- Compatible with IEEE 802.11b standard to provide a wireless data rate of up to11Mbps
- Operates at 2.4 ~ 2.5GHz frequency band to meet worldwide regulations
- Dynamic data rate scaling at 6, 9, 12, 18, 24, 36, 48, 54 for IEEE 802.11g
- Dynamic data rate scaling at 1, 2, 5.5, and 11Mbps for IEEE 802.11b
- Maximum reliability, throughput, and connectivity with automatic data rate switching
- Support for wireless data encryption with 64/128-bit WEP security standard
- Support for infrastructure networks via an access point and ad-hoc networks via a peer-to-peer communication
- Support for WEP, 802.1x, WPA, and WPA2 enhanced security
- Friendly user configuration and utilities
- Drivers support Windows 2K, XP 32/64-bit, Vista 32/ 64-bit, Windows 7 32/ 64-bit
- External WPS button to provide an easy connection to an access point or wireless router
- High speed USB 2.0 interface
- RoHS compliant
- Integrated antenna

Hardware Overview



Installation Procedure

System Preparation

Ensure that you carry out the following on your computer before installing the Wireless N 150 USB Adapter:

- Remove existing wireless adapter installations
- Disable any wireless adapters that are built-in to your computer
- Ensure that you have the correct wireless settings, such as the SSID and security settings, for the wireless network that you want to connect to.

Removing Existing Wireless Adapter Installation

If you currently have a wireless adapter installed in your computer, ensure you uninstall the wireless adapter software before installing the software for the Wireless N 150 USB Adapter as this may cause a conflict with the new software. If you want to use multiple wireless adapters on your computer at different times, configure the utilities so that they do not load when the computer boots up. If you are running Windows XP or a later Windows version, the built-in wireless utility can be used to manage all adapters.

To remove the existing wireless utility on a PC running Windows XP/Vista/7:

- Click **Start** > **Control Panel** > **Add or Remove Programs**
- Select the wireless utility that you want to remove.
- Click the **Remove** button and follow the steps in the wizard to remove the utility.

To remove the existing wireless utility on a PC running Windows 2000:

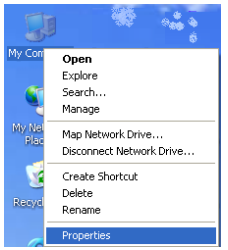
- Click **Start** > **Settings** > **Control Panel** > **Add or Remove Programs**
- Select the wireless utility that you want to remove.
- Click the **Remove** button and follow the steps in the wizard to remove the utility.

Disabling Other Wireless Adapters

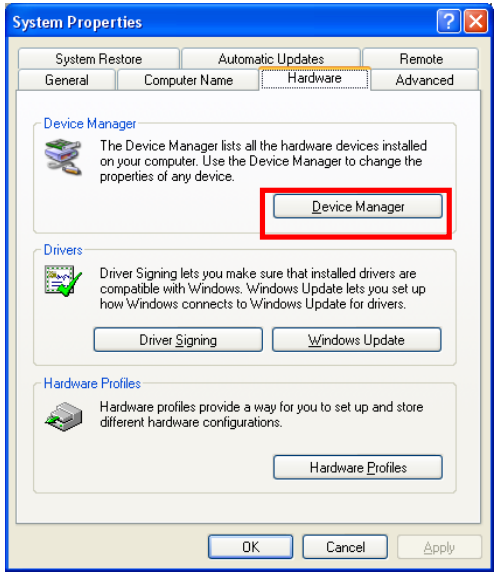
A built-in wireless adapter is included in most new laptops. In order to prevent any potential conflicts, it is recommended to disable the built-in wireless adapter before installing the Wireless N 150 USB Adapter.

Carry out the following to disable a network adapter:

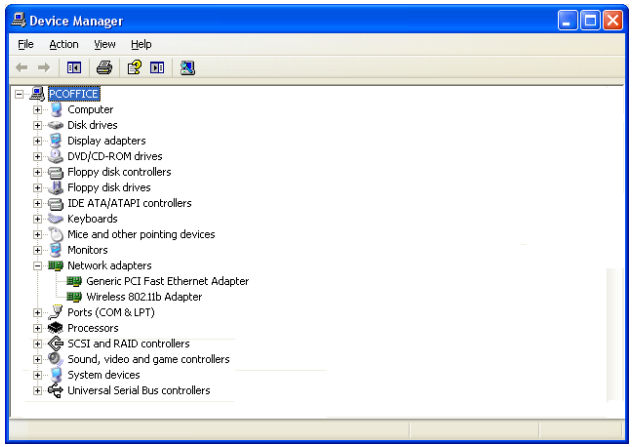
1. On your computer's desktop, right-click the **My Computer** icon and select **Properties**.



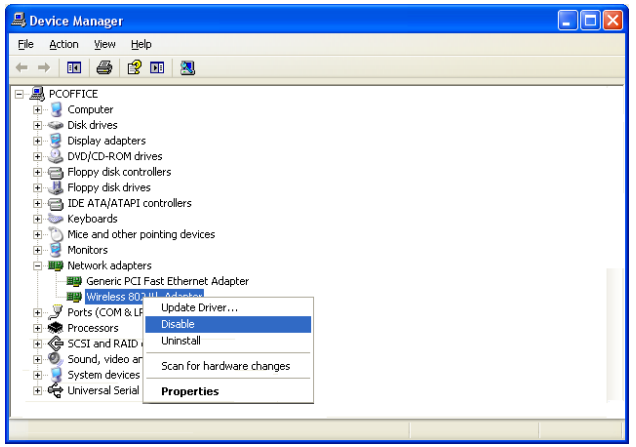
2. Click the **Hardware** tab and then click the **Device Manager** button.



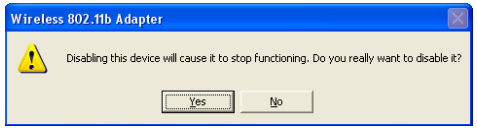
3. In the **Device Manager** window, scroll down the list and click the **+** icon next to **Network Adapters**.



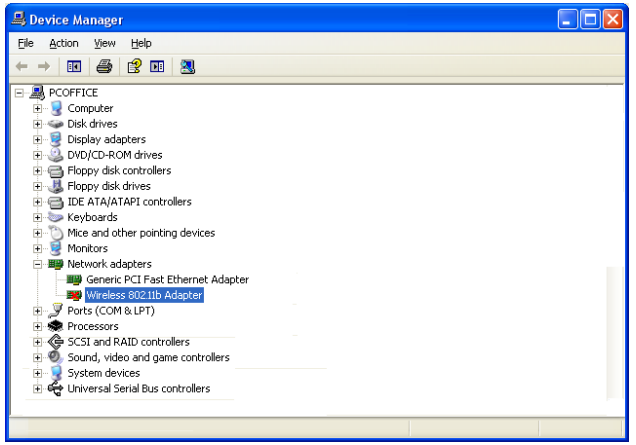
4. Right-click the adapter that you would like to disable and select the **Disable** option.



5. Click the **Yes** button to confirm that you want to disable the adapter.



6. The adapter's icon will now be crossed out with a red X, which indicates that the adapter is disabled. If you would like to re-enable the adapter in the future, right-click it and select the **Enable** option.



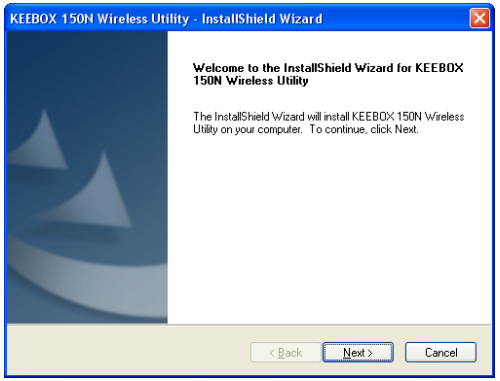
Installing the Wireless Adapter

Carry out the following to install the Wireless N 150 USB Adapter:

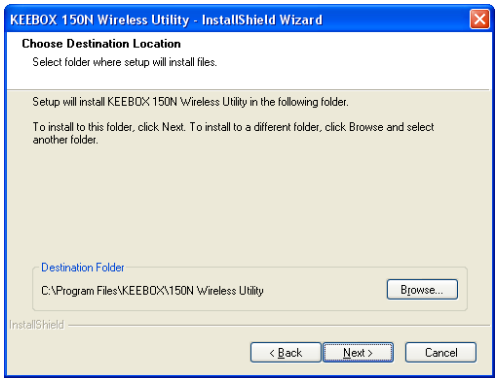
Caution: Ensure that you install the driver software on the included CD before connecting the Wireless N 150 USB Adapter to your computer.

1. Insert the included CD-ROM into your computer and click **Setup**.

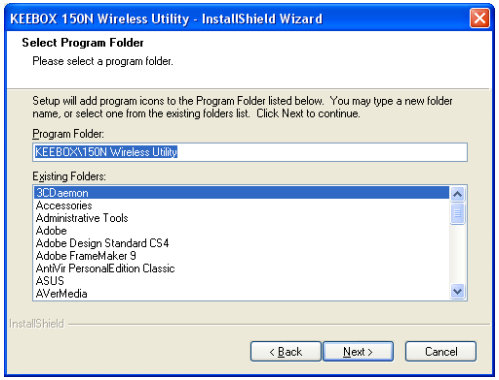
2. The InstallShield Wizard will appear. Click the **Next** button to proceed to the next window.



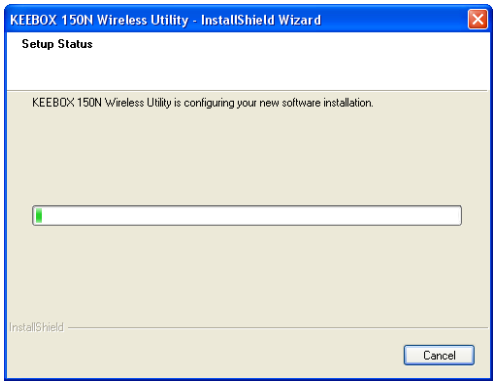
3. Specify the location that you want to install the utility files in. By default, the utility application files are installed in the **C:\Program Files\KEEBOX\150N Wireless Utility** folder. If you want to install the files in a different location, click the **Browse** button. When you have selected the utility installation location, click **Next** to continue to the next wizard window.



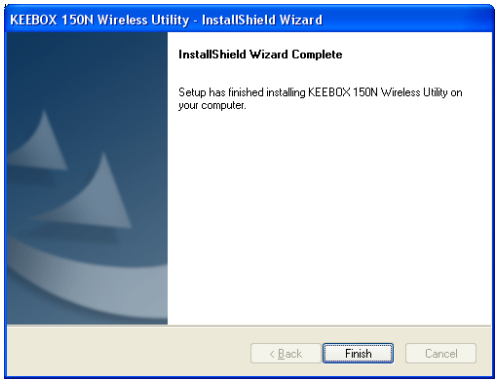
4. Specify the program folder that you want the Wireless N 150 USB Adapter Utility icon to be installed in. By default, the wizard creates a program folder called **KEEBOX\150N Wireless Utility**. If you would like to create a different folder name, enter the name of the new folder in the **Program Folder** field. To use an existing folder, select the folder in the **Existing Folders** section. When you have specified the Program Folder settings, click **Next** to continue to the next wizard window.



5. The following window appears while the installation is being carried out:

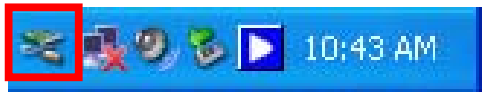


6. Click **Finish** to complete the installation.



7. Insert the Wireless N 150 USB Adapter into an available USB port on your computer.

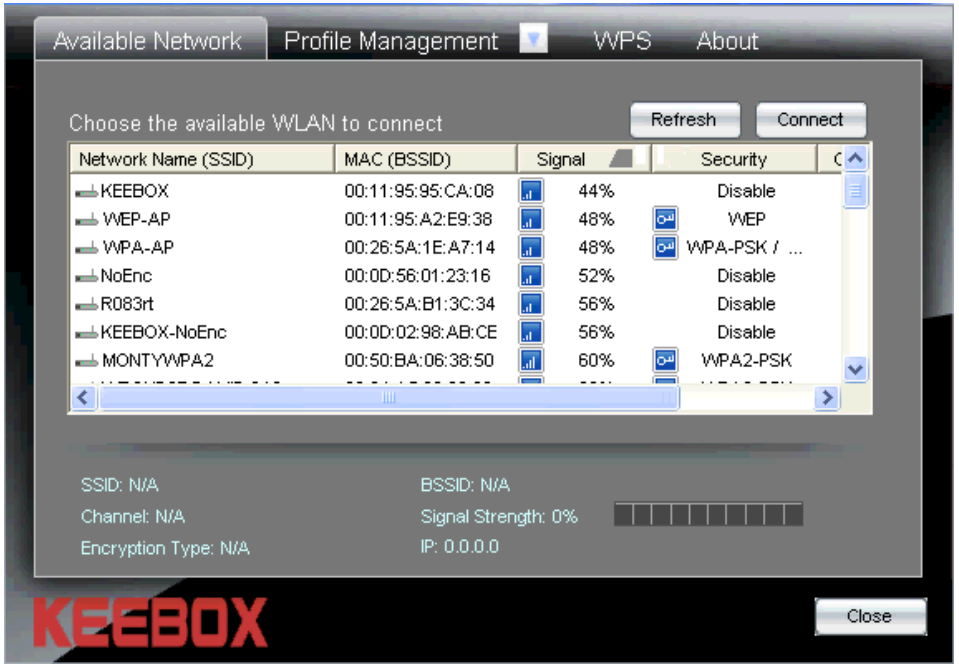
8. The **Found New Hardware** icon will display in the Windows Taskbar. The Found New Hardware Wizard will automatically install the driver for the Wireless N 150 USB adapter.



9. After the driver has been installed, the Wireless N 150 USB Adapter icon will appear in the right corner of the Windows Taskbar.

10. Right-click the Wireless N 150 USB Adapter icon and select the **Available Networks** option.

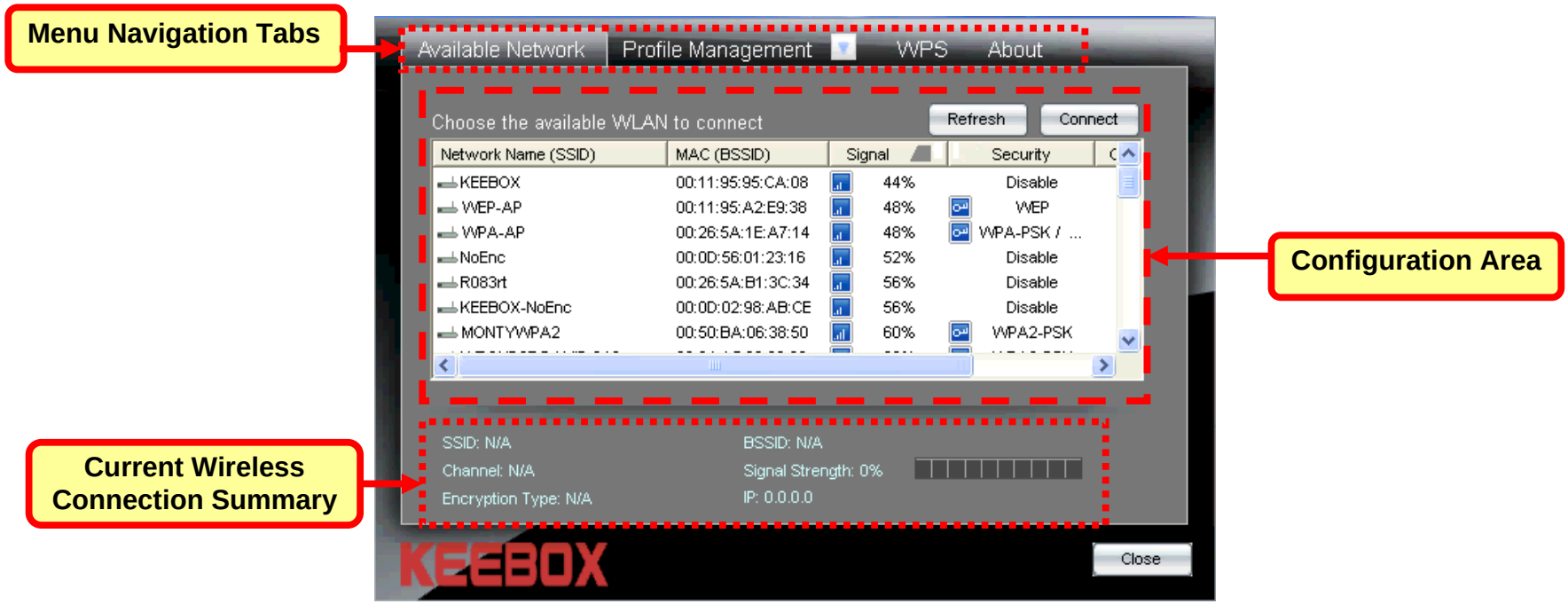
11. This will open the KEEBOX 150 N Wireless Utility, as shown below.



Adapter Configuration

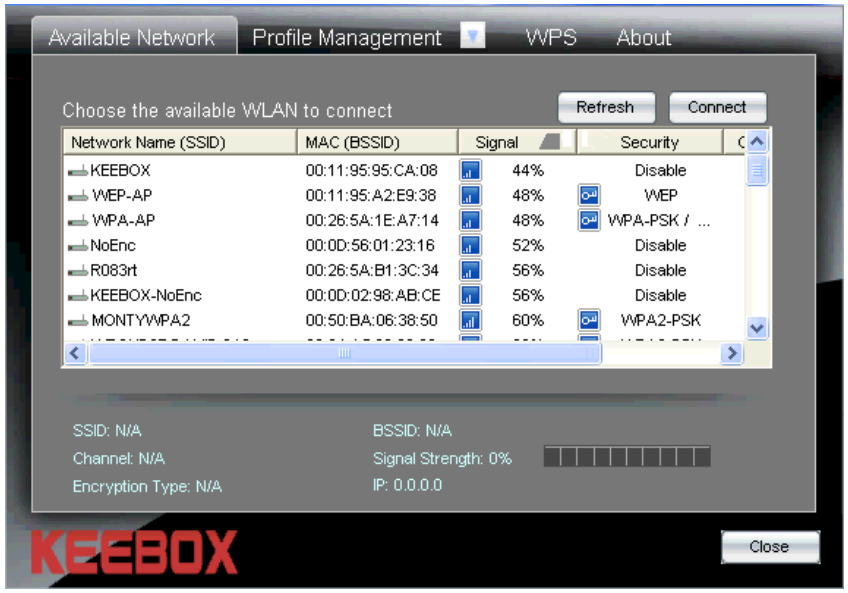
KEEBOX 150N Wireless Utility

The user can use the KEEBOX 150N Wireless Utility to manage the KEEBOX Wireless 150N USB Adapter. The utility provides a user friendly method for configuring the wireless adapter's settings.



Available Network

The Available Network window is used to display all the available wireless networks that are located in your area. You can also use this window to connect to one of the available wireless networks.



Network Name (SSID): This field displays the Service Set Identifier (SSID) of the wireless network. An SSID is used to assign a name to the wireless network.

MAC (BSSID): This field displays the Basic Service Set Identifier (BSSID) of the wireless device. The BSSID is usually the MAC address of the wireless device.

Signal: This field displays the strength of the wireless connection.

Security: This field displays the security method that has been implemented on the wireless network. If a wireless network has no security enabled, this field will display **Disable**.

Channel: This field displays the channel that the wireless network is using.

Connect Button: Use this button to connect to a wireless network. To connect to a wireless network:

1. Click the Network Name (SSID) of the wireless LAN that you want to.
2. Click the **Connect** button.
3. If choosing a secure wireless network, a pop-up window will appear.
4. Enter the required security information to connect to the wireless network.

Refresh Button: Click this button to refresh the list of wireless networks.

Profile Management

The Profile Management window is used to display and manage wireless network profiles. To enable a Profile, click the button next to the Profile Management tab and select the appropriate profile from the list.

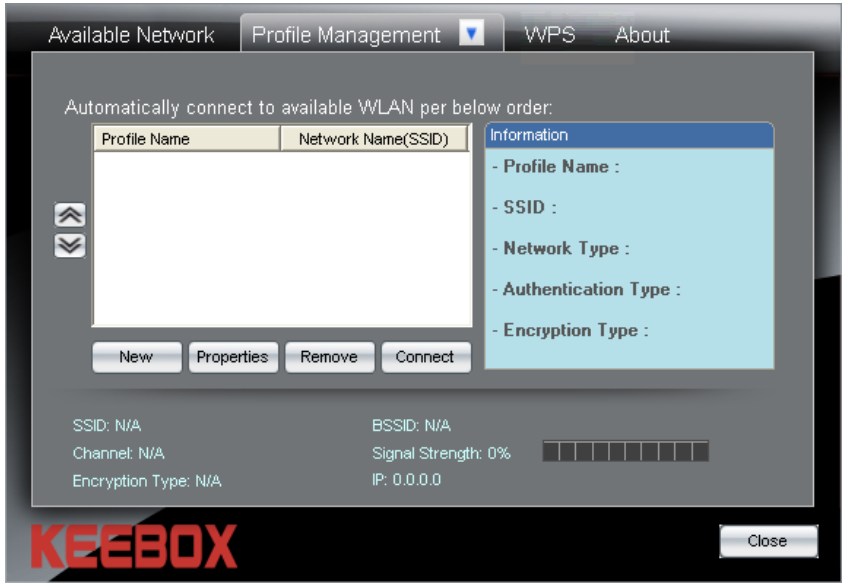
New: Click this button to create a new wireless profile. Refer to page 17 for more information on how to create a new wireless profile.

Properties: Click this button to modify an existing wireless profile. Refer to page 36 for more information on how to modify an existing wireless profile.

Remove: Click this button to delete an existing wireless profile.

Connect: To use an existing wireless profile, select the wireless profile from the list and click **Connect**.

Information: This section displays the *Profile Name*, *SSID*, *Network Type*, *Authentication Type*, and *Encryption Type* of the wireless profile that has been selected in the profile list.



Creating a Wireless Profile

The following window appears after clicking the **New** button in the Profile Management window.

Profile Name: Enter a name to identify the location that the new profile will be used in, (e.g. Lounge, Coffee Shop, Work).

Network Name (SSID): Enter the SSID of the wireless network that you want to use this profile for.

Network Type: Use the drop-down menu to select the wireless network type. If you will be connecting to a wireless router or access point, select the *Infrastructure* mode. Select the *Ad-Hoc* option if you will connect to a peer-to-peer wireless network.

Basic Security for Personal: Click this radio button if you are connecting the Wireless N 150 USB adapter to a home wireless network. Refer to page 18 for more information.

Advanced Security for Enterprise: Click this radio button if you are connecting the Wireless N 150 USB adapter to a company wireless network. Refer to page 25 for more information.

Creating a Basic Security Wireless Profile

Click the **Basic Security for Personal** radio button to create a basic wireless profile. The Basic Security Wireless Profile supports the *Open\Disable*, *Open\WEP*, *Shared\WEP*, *WPA-PSK\TKIP*, *WPA-PSK\AES, WPA2-PSK\TKIP*, and *WPA2-PSK\AES* security types. Use the **Security** drop-down menu to select the security type.

Creating a Basic Security Wireless Profile- Open \ WEP

Select the Open \ WEP option from the **Security** drop-down menu to use the Open \ WEP security option.

Enable 802.1x: Check this box to enable 802.1x settings on the Wireless N 150 USB Adapter. If enabling 802.1x, the fields required for configuring the 802.1x parameters appear in the section that is used for Network Key configuration. See page 35 for more information on how to configure the Wireless N 150 USB Adapter to use 802.1x.

Network Key: If not enabling 802.1x, enter the WEP key that is used on your access point or wireless router.

Display Key: Check this box if you would like to view the key that has been entered in the **Network Key** field. If this box is left unchecked, the Network Key will appear as a series of *.

Wepkey Index: Use the drop-down menu to select the *WEP Key Index Number* that is being used on your access point or wireless router.

OK Button: Click this button when you have finished configuring the advanced wireless profile.

Cancel Button: Click this button to cancel any changes made.

Creating a Basic Security Wireless Profile- Shared \ WEP

Select the Shared \ WEP option from the **Security** drop-down menu to use the Shared \ WEP security option.

Network Key: Enter the WEP key that is used on your access point or wireless router.

Display Key: Check this box if you would like to view the key that has been entered in the **Network Key** field. If this box is left unchecked, the Network Key will appear as a series of *.

Wepkey Index : Use the drop-down menu to select the *WEP Key Index Number* that is being used on your access point or wireless router.

OK Button: Click this button when you have finished configuring the advanced wireless profile.

Cancel Button: Click this button to cancel any changes made.

Creating a Basic Security Wireless Profile- WPA-PSK \ TKIP

Select the WPA-PSK \ TKIP option from the **Security** drop-down menu to use the WPA-PSK \ TKIP security option.

Network Key: Enter the WPA key that is used on your access point or wireless router.

Display Key: Check this box if you would like to view the key that has been entered in the **Network Key** field. If this box is left unchecked, the Network Key will appear as a series of *.

OK Button: Click this button when you have finished configuring the advanced wireless profile.

Cancel Button: Click this button to cancel any changes made.

Creating a Basic Security Wireless Profile- WPA-PSK \ AES

Select the WPA-PSK \ AES option from the **Security** drop-down menu to use the WPA-PSK \ AES security option.

Network Key: Enter the WPA key that is used on your access point or wireless router.

Display Key: Check this box if you would like to view the key that has been entered in the **Network Key** field. If this box is left unchecked, the Network Key will appear as a series of *.

OK Button: Click this button when you have finished configuring the advanced wireless profile.

Cancel Button: Click this button to cancel any changes made.

Creating a Basic Security Wireless Profile- WPA2-PSK \ TKIP

Select the WPA2-PSK \ TKIP option from the **Security** drop-down menu to use the WPA2-PSK \ TKIP security option.

Network Key: Enter the WPA2 key that is used on your access point or wireless router.

Display Key: Check this box if you would like to view the key that has been entered in the **Network Key** field. If this box is left unchecked, the Network Key will appear as a series of *.

OK Button: Click this button when you have finished configuring the advanced wireless profile.

Cancel Button: Click this button to cancel any changes made.

Creating a Basic Security Wireless Profile- WPA2-PSK \ AES

Select the WPA2-PSK \ AES option from the **Security** drop-down menu to use the WPA2-PSK \ AES security option.

Network Key: Enter the WPA2 key that is used on your access point or wireless router.

Display Key: Check this box if you would like to view the key that has been entered in the **Network Key** field. If this box is left unchecked, the Network Key will appear as a series of *.

OK Button: Click this button when you have finished configuring the advanced wireless profile.

Cancel Button: Click this button to cancel any changes made.

Creating an Advanced Security Wireless Profile

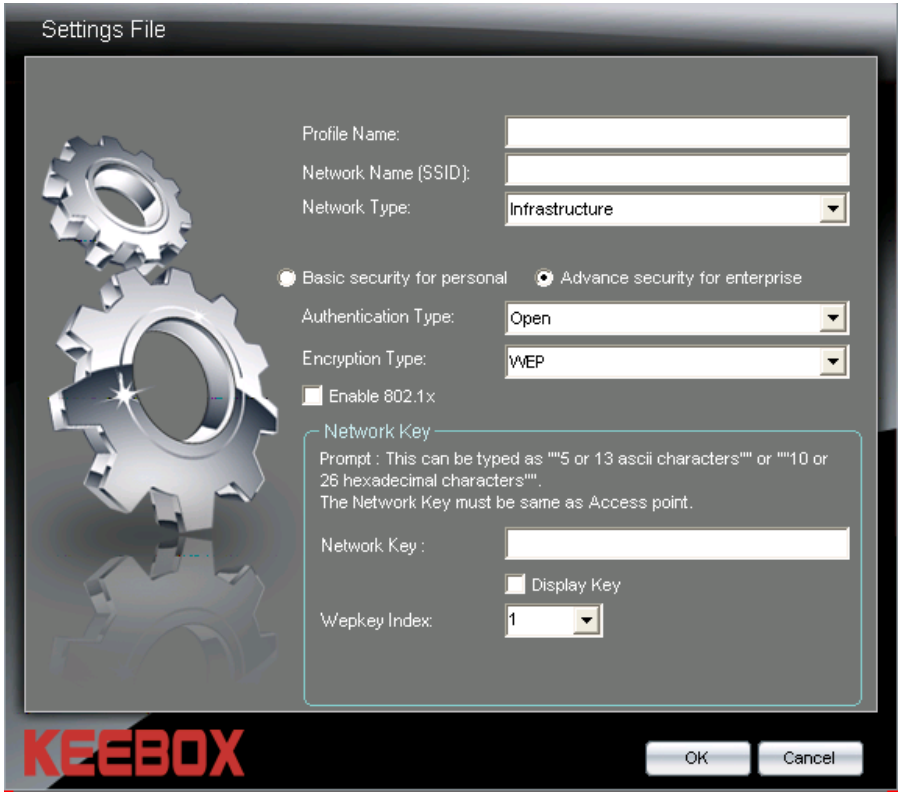
Click the **Advanced Security for Enterprise** radio button to create an advanced wireless profile. Use the drop-down menus to select the *Authentication* and *Encryption Type* that is being used on your wireless network.

Authentication Type: Use the drop-down menu to select the Authentication Type that is being used on your wireless network. The available options are:

- *Open*
- *Shared*
- *WPA-EAP (Enterprise)*
- *WPA-PSK (Personal)*
- *WPA2-EAP (Enterprise)*
- *WPA2-PSK (Personal)*

Encryption Type: Use the drop-down menu to select the *Encryption Method* that your wireless network is using with the specified authentication type.

Enable 802.1x: Check this box to enable 802.1x settings on the Wireless N 150 USB Adapter. If enabling 802.1x, the fields required for configuring the 802.1x parameters appear in the section that is used for Network Key configuration. See page 35 for more information on how to configure the Wireless N 150 USB Adapter to use 802.1x.



Network Key: If not enabling 802.1x, enter the WEP key that is used on your access point or wireless router.

Display Key: Check this box if you would like to view the key that has been entered in the **Network Key** field. If this box is left unchecked, the Network Key will appear as a series of *.

Wepkey Index : Use the drop-down menu to select the *WEP Key Index Number* that is being used on your access point or wireless router.

OK Button: Click this button when you have finished configuring the advanced wireless profile.

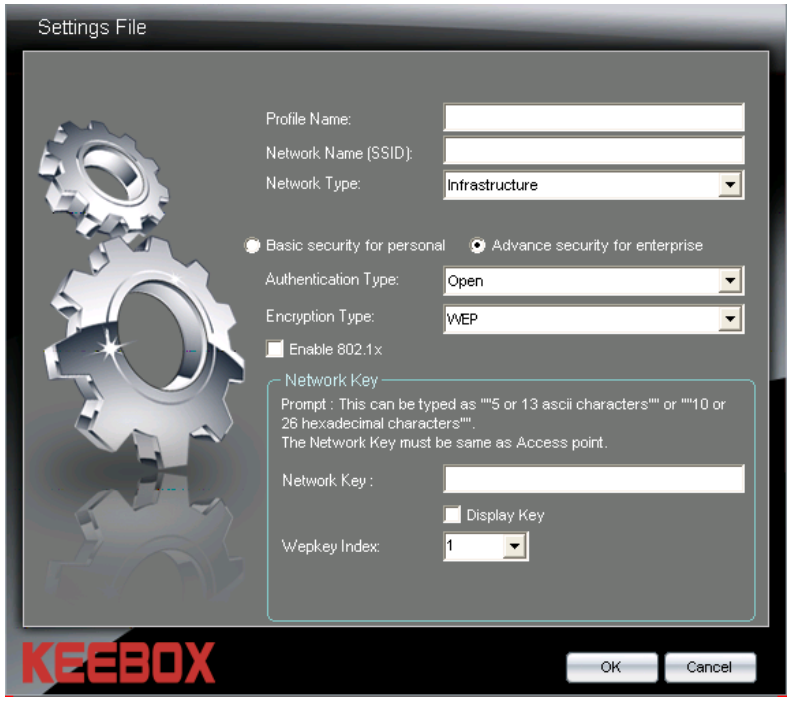
Cancel Button: Click this button to cancel any changes made.

Creating an Advanced Security Wireless Profile-Open Authentication

Authentication Type: Select the *Open* authentication type from the drop-down menu.

Encryption Type: If your network is using encryption with the open authentication method, select W*EP* from the drop-down menu. If no encryption is being used select *Disabled*.

Enable 802.1x: Check this box to enable 802.1x settings on the Wireless N 150 USB Adapter. If enabling 802.1x, the fields required for configuring the 802.1x parameters appear in the section that is used for Network Key configuration. See page 35 for more information on how to configure the Wireless N 150 USB Adapter to use 802.1x.



Network Key: If not enabling 802.1x, enter the WEP key that is used on your access point or wireless router.

Display Key: Check this box if you would like to view the key that has been entered in the **Network Key** field. If this box is left unchecked, the Network Key will appear as a series of *.

Wepkey Index : Use the drop-down menu to select the *WEP Key Index Number* that is being used on your access point or wireless router.

OK Button: Click this button when you have finished configuring the advanced wireless profile.

Cancel Button: Click this button to cancel any changes made.

Creating an Advanced Security Wireless Profile-Shared Authentication

Authentication Type: Select the *Shared* authentication type from the drop-down menu.

Encryption Type: The Shared authentication option only supports the *WEP* encryption method.

Network Key: Enter the WEP key that is used on your access point or wireless router.

Display Key: Check this box if you would like to view the key that has been entered in the **Network Key** field. If this box is left unchecked, the Network Key will appear as a series of *.

Wepkey Index: Use the drop-down menu to select the *WEP Key Index Number* that is being used on your access point or wireless router.

OK Button: Click this button when you have finished configuring the advanced wireless profile.

Cancel Button: Click this button to cancel any changes made.

Creating an Advanced Security Wireless Profile-WPA-EAP (Enterprise) Authentication

Authentication Type: Select the *WPA-EAP (Enterprise)* authentication type from the drop-down menu.

Encryption Type: Use the drop-down menu to select whether the *TKIP or AES* encryption method is being used on your network.

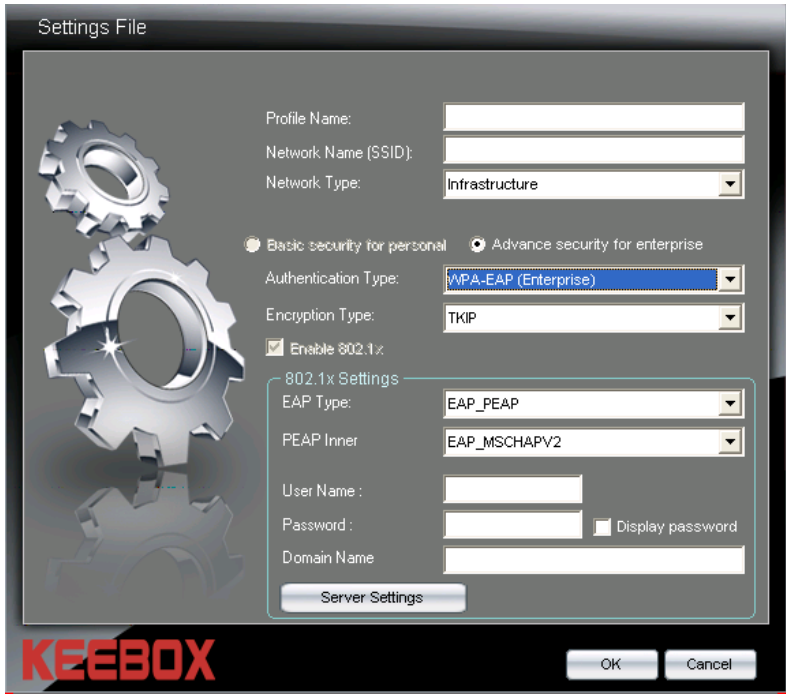
Enable 802.1x: The *WPA-EAP (Enterprise)* authentication method uses 802.1x.

EAP Type: Use the drop-down menu to select the *EAP Type* being used by your network.

If selecting the *EAP_TLS* option, select the *User Certificate* that is being used from the **User Certificate** drop-down menu.

If selecting the *EAP_PEAP* option, select the *PEAP Inner* value that is being used from the **PEAP Inner** drop-down menu.

If selecting the *EAP_TTLS* option, select the *TTLS Inner* value that is being used from the **TTLS Inner** drop-down menu.



User Name: Enter the user name that is being used for 802.1x in this field.

Password: Enter the password for the 802.1x user name in this field.

OK Button: Click this button when you have finished configuring the advanced wireless profile.

Cancel Button: Click this button to cancel any changes made.

Creating an Advanced Security Wireless Profile-WPA-PSK (Personal) Authentication

Authentication Type: Use the drop-down menu to select the *WPA-PSK (Personal)* authentication option.

Encryption Type: Use the drop-down menu to select whether the *TKIP* or *AES* encryption type is being used on your wireless network.

Network Key: Enter the WPA key that is used on your access point or wireless router.

Display Key: Check this box if you would like to view the key that has been entered in the **Network Key** field. If this box is left unchecked, the Network Key will appear as a series of *.

OK Button: Click this button when you have finished configuring the advanced wireless profile. Click this button to save any changes made.

Cancel Button: Click this button to cancel any changes made.

Creating an Advanced Security Wireless Profile-WPA2-EAP (Enterprise) Authentication

Authentication Type: Select the *WPA2-EAP (Enterprise)* authentication type from the drop-down menu.

Encryption Type: Use the drop-down menu to select whether the *TKIP or AES* encryption method is being used on your network.

Enable 802.1x: The *WPA-EAP (Enterprise)* authentication method uses 802.1x.

EAP Type: Use the drop-down menu to select the *EAP Type* being used by your network.

If selecting the *EAP_TLS* option, select the *User Certificate* that is being used from the **User Certificate** drop-down menu.

If selecting the *EAP_PEAP* option, select the *PEAP Inner* value that is being used from the **PEAP Inner** drop-down menu.

If selecting the *EAP_TTLS* option, select the *TTLS Inner* value that is being used from the **TTLS Inner** drop-down menu.

User Name: Enter the user name that is being used for 802.1x in this field.

Password: Enter the password for the 802.1x user name in this field.

Server Settings: Click this button to configure the Trusted Root Certification Authorities List. See page 36 for more information.

OK Button: Click this button when you have finished configuring the advanced wireless profile.

Cancel Button: Click this button to cancel any changes made.

Creating an Advanced Security Wireless Profile-WPA2-PSK (Personal) Authentication

Authentication Type: Use the drop-down menu to select the *WPA2-PSK (Personal)* authentication option.

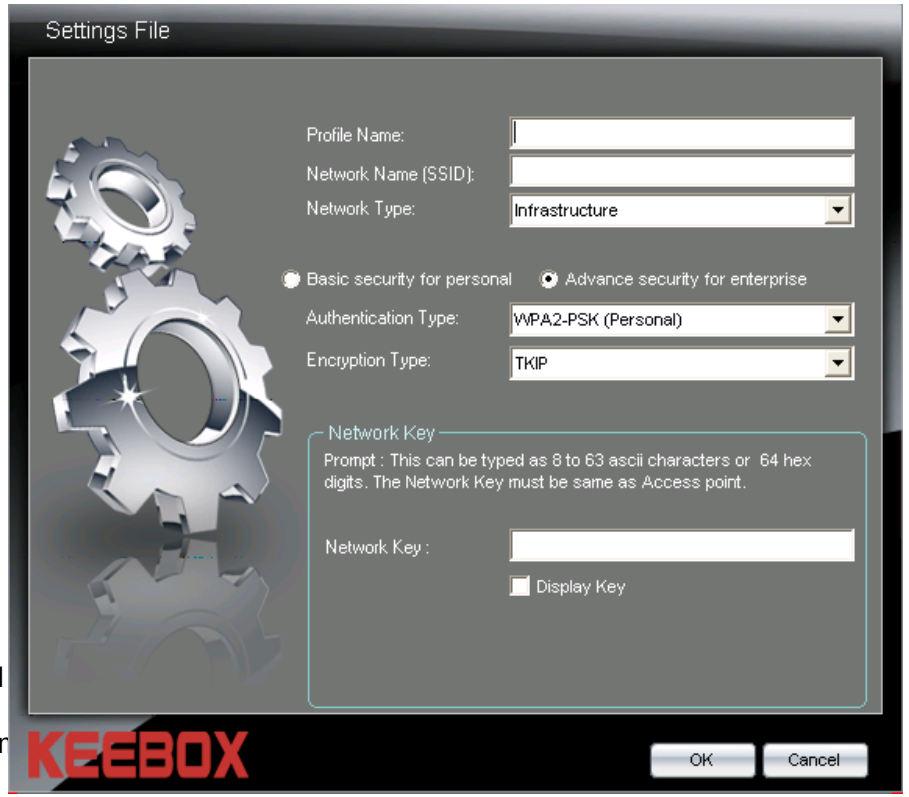
Encryption Type: Use the drop-down menu to select whether the *TKIP* or *AES* encryption type is being used on your wireless network.

Network Key: Enter the WPA key that is used on your access point or wireless router.

Display Key: Check this box if you would like to view the key that has been entered in the **Network Key** field. If this box is left unchecked, the Network Key will appear as a series of *.

OK Button: Click this button when you have finished configuring the advanced wireless profile.

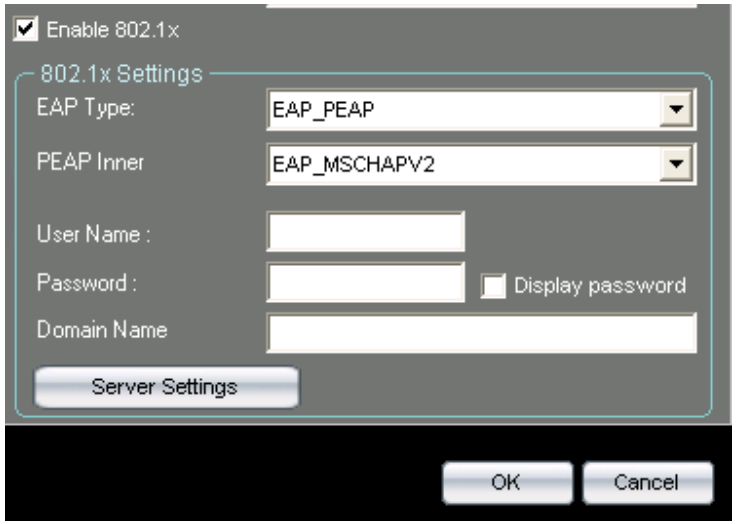
Click this button when you have finished configuring the advanced wireless profile. any changes r



Cancel Button: Click this button to cancel any changes made.

Enabling and Configuring 802.1x Parameter for a Wireless Profile

The Open \ WEP Basic and Advanced Security options can be configured to use 802.1x. To use 802.1x with these security options, check the **Enable 802.1x** box and configure the parameters that appear in the 802.1x Settings section as described below:



Enable 802.1x: Check this box to enable 802.1x.

EAP Type: Use the drop-down menu to select the *EAP Type* being used by your network.

If selecting the *EAP_TLS* option, select the *User Certificate* that is being used from the **User Certificate** drop-down menu.

If selecting the *EAP_PEAP* option, select the *PEAP Inner* value that is being used from the **PEAP Inner** drop-down menu.

If selecting the *EAP_TTLS* option, select the *TTLS Inner* value that is being used from the **TTLS Inner** drop-down menu.

User Name: Enter the user name that is being used for 802.1x in this field.

Password: Enter the password for the 802.1x user name in this field. Check the **Display Password** box to display the password in clear text. To display the passwords as a series of ****, uncheck the **Display Password** box.

Server Settings: Click this button to configure the Trusted Root Certification Authorities List. See the following page for more information.

OK Button: Click this button when you have finished configuring the advanced wireless profile.

Cancel Button: Click this button to cancel any changes made.

Configuring 802.1x Validate Server Certificate Settings

Carry out the following to configure the 802.1x Validate Server Certificate Settings.

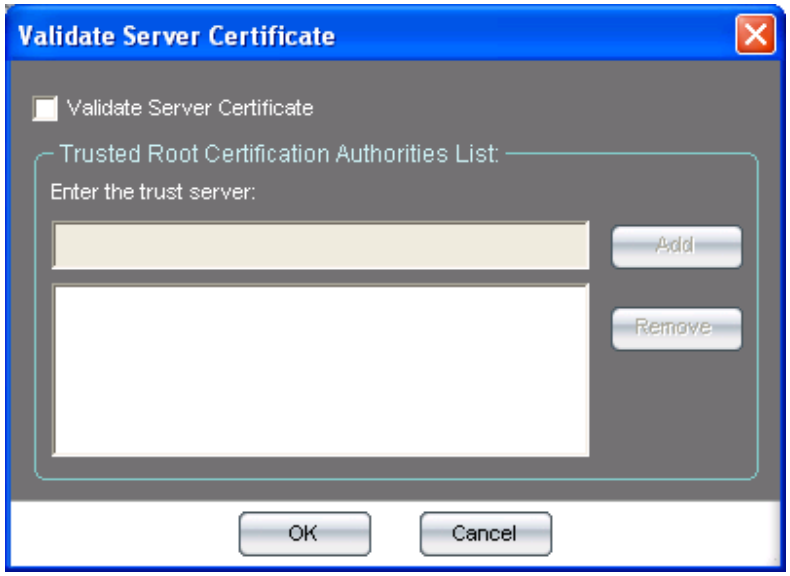
Validate Server Certificate: Check this box to enable the 802.1x Validate Server Certificate option.

Trust Root Certification Authorities List: Carry out the following to add a new Trust Server:

1. Enter the *DNS host name* of the Trust Server in the input field.
2. Click the **Add** button.

Carry out the following to remove a Trust server.

1. Select the Trust Server that you want to remove from the list.
2. Click the **Remove** button.



OK Button: Click this button when you have finished configuring the Validate Server Certificate settings.

Cancel Button: Click this button to cancel any changes made to the Validate Server Certificate settings.

Editing a Wireless Profile

To modify an existing wireless profile, select the profile that you want to modify in the Profile Management list and click the **Properties** button to reveal the following window.

Profile Name: Enter a name to identify the location that the new profile will be used in (e.g. Lounge, Coffee Shop, Work).

Network Name (SSID): Enter the SSID of the wireless network that you want to use this profile for.

Network Type: Use the drop-down menu to select the wireless network type. If you will be connecting to a wireless router or access point, select the *Infrastructure* mode. Select the *Ad-Hoc* option if you will connect to a peer-to-peer wireless network.

Basic Security for Personal: Click this radio button if you are connecting the Wireless N 150 USB adapter to a home wireless network. Refer to page 18 for more information.

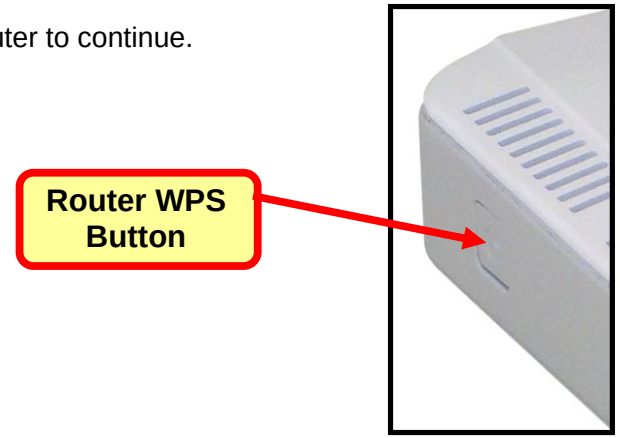
Advanced Security for Enterprise: Click this radio button if you are connecting the Wireless N 150 USB adapter to a company wireless network. Refer to page 25 for more information.

WPS Push Button Configuration (PBC)

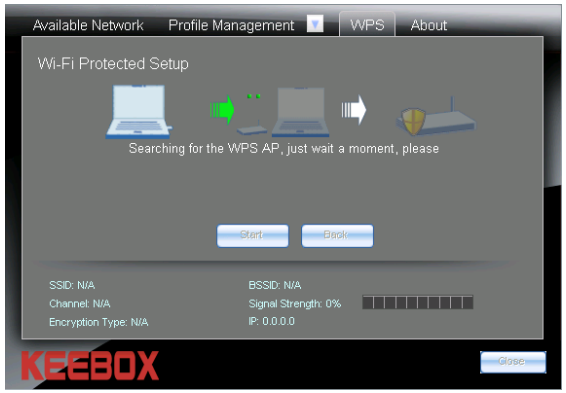
Carry out the following steps to connect to your network using the WPS Push Button Configuration method.

1. Press the WPS button on the adapter and hold for four seconds until the wizard screen appears.

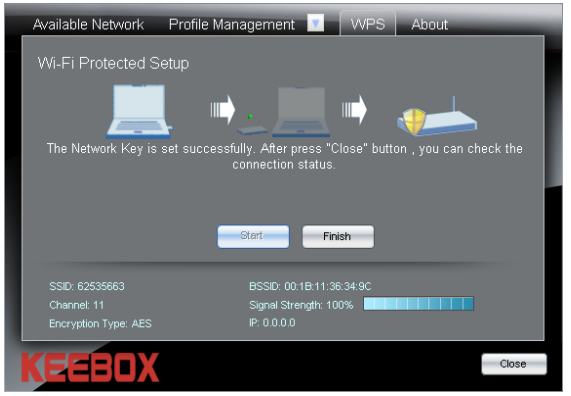
2. Press the WPS button located on your access point or router to continue.



3. The following window appears while the Wireless N 150 USB Adapter attempts to connect to the access point or wireless router.



4. After the adapter has successfully established a network connection, the following screen will appear on your computer. Click **Finish** to complete WPS PBC setup.



WPS PIN Code

Carry out the following steps to connect to your network using the WPS PIN Code method

1. Select PIN (Personal Identification Number) and click **Next**.

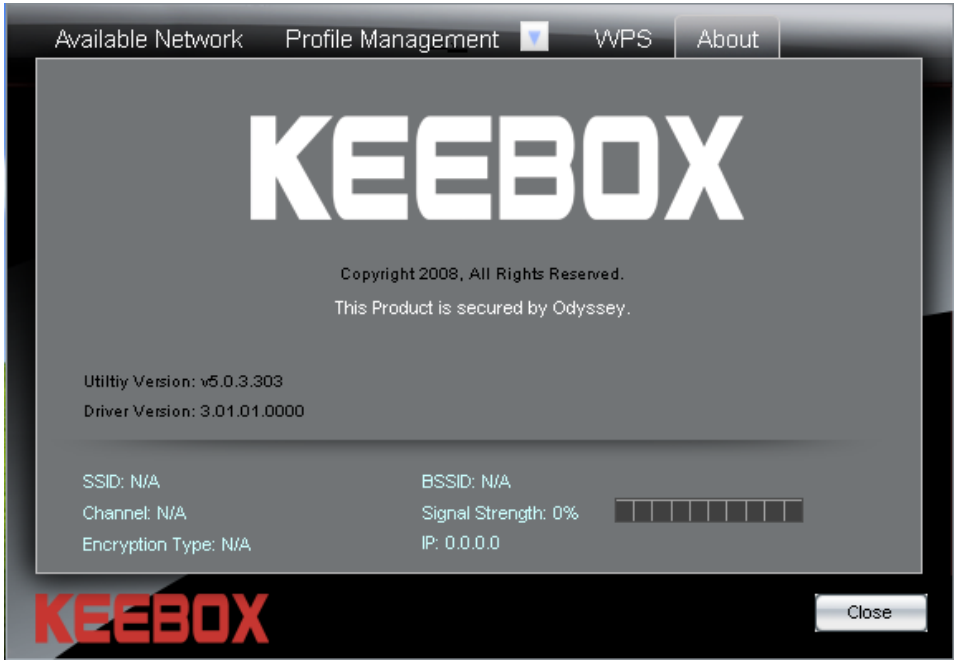
2. Make sure your access point or wireless router is close by. Write down the number on the screen. Enter this number in your access point or wireless router. Please refer to the manufacture's manual for instructions. Once you click Next, you will have 2 minutes to enter this number in your access point or wireless router.

3. The adapter will try to establish connectivity to your access point or wireless router.

4. When this screen appears, you have successfully established connectivity. Click **Finish** to complete your setup.

About

Use the About window to view information about the Firmware and Utility versions of the wireless adapter.



Technical Specifications

General	
Bus Type	USB 2.0 (1.1 compatible)
Antenna Type	Integrated Antenna
Operating Voltage	5VDC + / - 10%
Current Consumption	550mA at Continuous Transmit Mode 220mA at Receive Mode (Target)
LEDs	Active LED
Dimensions	Length: 28mm (PCBA) Width: 12mm (PCBA) Height: 6mm (PCBA)

IEEE 802.11b Wireless	
Standard	IEEE 802.11b
Radio and Antenna Modulation Schemes	DQPSK, DBPSK, DSSS, and CCK
Operating Frequency	2400 ~ 2483.5MHz ISM Band
Channel Numbers	11 channels for United States 13 channels for European countries 14 channels for Japan
Data Rate	11, 5.5, 2, and 1Mbps
Media Access Protocol	CSMA/CA with ACK
Transmitter Output Power at Antenna Connector	TBD
Receiver Sensitivity at Antenna Connector	TBD

IEEE 802.11g Wireless	
Standard	IEEE 802.11g
Radio and Antenna Modulation Schemes	BPSK, QPSK, 16QAM, 64QAM with OFDM
Operating Frequency	2400 ~ 2483.5MHz ISM Band
Channel Numbers	11 channels for United States 13 channels for European countries 13 channels for Japan
Data Rate	54, 48, 36, 24, 18, 12, 9, and 6Mbps
Media Access Protocol	CSMA/CA with ACK
Transmitter Output Power at Antenna Connector	TBD
Receiver Sensitivity at Antenna Connector	TBD

IEEE 802.11n Wireless	
Standard	Draft n
Radio and Modulation Type	BPSK, QPSK, 16QAM, 64QAM with OFDM
Operating Frequency	2400 ~ 2483.5MHz ISM Band
Data Rate	Draft 802.11n (20MHz, 800ns GI): 65 / 58.5 / 52 / 39 / 26 / 19.5 / 13 / 6.5Mbps Draft 802.11n (40MHz, 800ns GI): 135 / 121.5 / 108 / 81 / 54 / 40.5 / 27 / 13.5Mbps Draft 802.11n (20MHz, 400ns GI): 72.2 / 65 / 57.8 / 43.3 / 28.9 / 21.7 / 14.4 / 7.2Mbps Draft 802.11n (40MHz, 400ns GI): 150 / 135 / 120 / 90 / 60 / 45 / 30 / 15Mbps
Media Access Protocol	CSMA/CA with ACK
Transmitter Output Power at Antenna Connector	TBD
Receiver Sensitivity at Antenna Connector	TBD