User Manual
(WUA-1810E)

Digital Data Communications GmbH

Hohe Straße 1, 44139 Dortmund, Germany

Email : support@level1.com

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Part 1: Working on Windows PC

1. Hardware Installation

1.1 Turn on your PC, insert USB WiFi Adapter to USB port of your PC

.
Note: After you insert the USB WiFi Adapter into USB port of your PC, in case you see the below interface, please click the Cancel button.

1.2 Insert the driver CD from the package into the CD-ROM of your PC, find the corresponding driver for the operating system of your PC. If your PC cannot run the CD, please visit our website http://www.level1.com to find your model number and then download the driver of it.
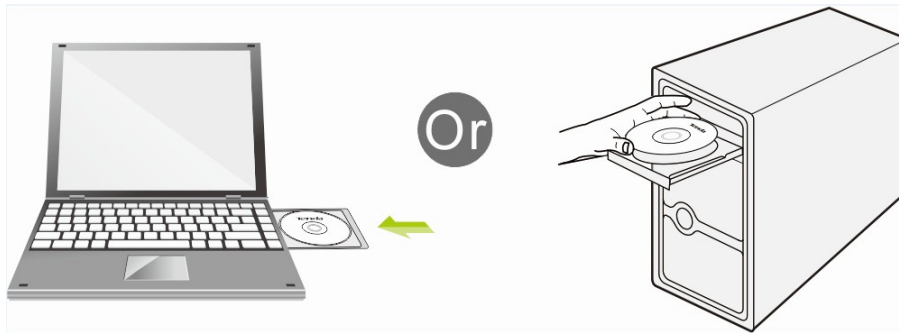
2. Install Driver on Your PC

2.1 **Important Notice**:

In case your PC has integrated WiFi adapter, please turn it off before installing driver for USB WiFi adapter. Otherwise, you will not know which WiFi adapter is working for you and these WiFi adapters may cause conflict with each other.

Meanwhile, please uninstall the WiFi driver of your other WiFi adapter before installing driver of USB WiFi adapter; In case you install two or more WiFi adapter drivers in one PC, it may cause conflicts between these drivers and cause the WiFi adapter fail to work. You can find the installed WiFi adapter drivers and un-install it in the Control Panel Install and Un-Install Software. While please **DO NOT** uninstall the driver of the WiFi adapter integrated on your PC, you just need to turn it off.

**Below are steps for installing USB WiFi Adapter driver on your Windows PC:**

2.2 In the CD, please find the correct driver for your operating system, open the folder

to find and double click this Setup button:

2.3 Please follow the on-screen instruction to finish the installation of driver.
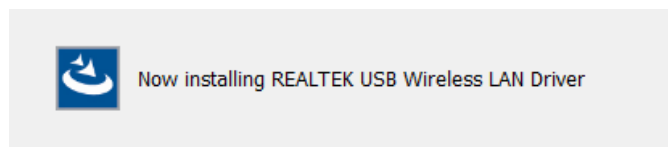
2.3.1 In the below interface, please wait, please do NOT click the "Cancel" button; otherwise, installation will stop;
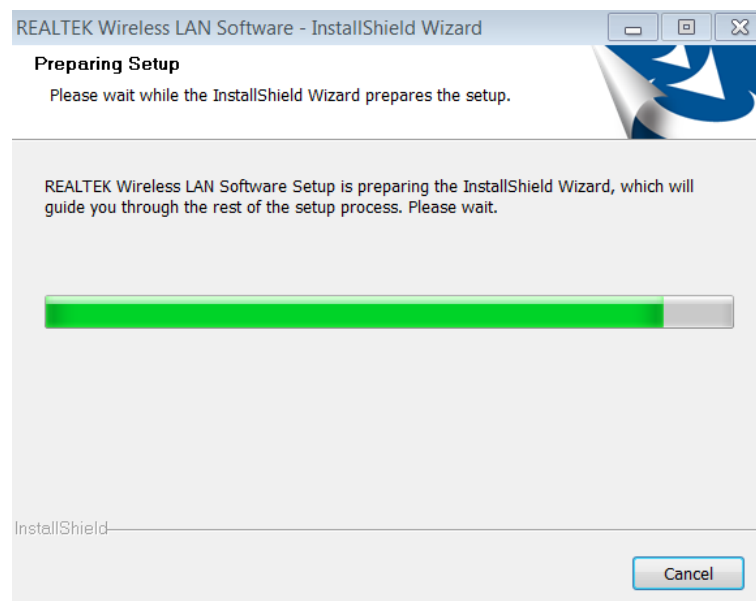
2.3.2   In the below interface, please click "Next" button to continue with the installation;

2.3.3   In the below interface, please wait

2.3.4   In the below interface, please wait;
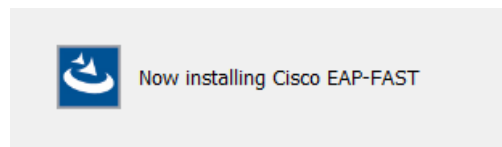
2.3.5   In the below interface, please select "Yes, I want to restart my computer now." and then click the "Finish" button to restart your computer. When your computer is turned on again, the driver will be installed on your computer successfully and you can start to use USB WiFi adapter;

3. **Connect to Your WiFi Network**

   You can manage your USB WiFi Adapter and connect it to your WiFi network by using the Windows Integrated WiFi network management tool. And for Windows 8.1/8/7/Vista/XP, you can also use the USB WiFi Adapter integrated Realtek WiFi Management tool to manage your WiFi network.

   3.1 Use Windows Integrated WiFi Network Management to Connect your USB WiFi Adapter to your WiFi Network. We here take Windows 8 as example.
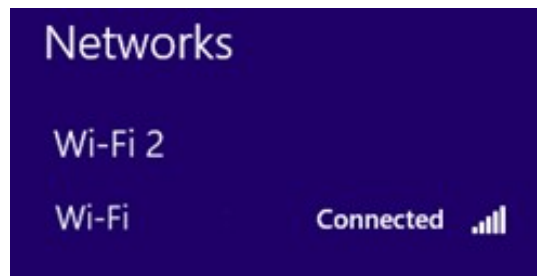
   3.1.1 Click the icon on the bottom right corner of your desktop.

   3.1.2 Select your wireless network from the list, click **Connect** and then follow onscreen instructions. You need to input your WiFi key to connect to your WiFi network.

3.1.3 When your wireless network is connected successfully, the following screen will appear.

3.1.4. Note:

3.1.4.1 If you cannot find the icon📶 please move your mouse to the top right corner of you desktop, select **Settings Control Panel Network and Internet Network and Sharing Center Change Adapter Settings**, right click Wi-Fi and select **Connect/Disconnect.**

3.1.4.2 If you cannot find your wireless network from the list, please make sure that your PC is not under Airplane mode as Airplane mode disables your Wi-Fi function.

3.1.4.3 If the Wi-Fi network which you connect to does not have the Internet access, then you will get a Restricted status and a yellow exclamation mark will appear in the wireless icon in your system tray (lower-right corner).

3.1.4.4 If you are using Windows XP and cannot find its wireless management function, please make sure that you have enabled its wireless management function which is called Wireless Zero Configuration services on your XP.

3.2 Use USB WiFi Adapter WiFi Management tool to Connect to your WiFi Network

    3.2.1.1 You can also use the "Realtek 11n/11AC USB Wireless LAN Utility" to manage USB WiFi Adapter and connect it to your WiFi network.

    3.2.1.2 Please double click the icon of 📶 on your desktop to open the software, follow the on-screen instruction to Search your WiFi network, Input the WiFi Key (WiFi Password), and then Connect to the WiFi

Network.

3.2.1.3 Once you are connected to the WiFi network successfully, your information for this Network will be stored in this software, you can find it in "Profile"; Every time when you turn on your PC, USB WiFi Adapter will connect to your WiFi network automatically with these information stored. In case you connect to more than one WiFi networks successfully, you can choose the corresponding Profile of them in this software.

4. **Frequently Asked Questions for Windows PC**

4.1 **Ask: I plug USB WiFi Adapter to the USB port of my PC and it does not work. What shall I do?**
Answer: One of the below may cause the USB WiFi Adapter fail to work, please check and try one or more of the below solutions:

4.1.1 Please try another USB port of your PC.

4.1.2 Please make sure that you have installed the driver on your PC. This adapter support the below Operating Systems, you need to install the correct driver for it:
-Windows:Win10 32/64, Win8.1 32/64, Win8 32/64, Win7 32/64, Vista 32/64, XP 32/64, 32Bit or 64Bit OS
-MAC OSX
-Linux

4.1.3 Please make sure that you are not installing more than one WiFi adapter drivers in one PC, this will cause USB WiFi Adapter fail to work though you have installed driver for it. Please remove other WiFi adapters' drivers before installing driver for USB WiFi adapter. While please **DO NOT** uninstall the driver of your WiFi adapter which is integrated on your PC. You can find more about this in Part 2.1.

4.2 Please make sure that you did not Disable USB WiFi Adapter in the Network configuration of your PC. You need to make sure that it is Enabled. You can check this on your PC as below: Network Properties On the left hand side of the menu, click "Change Adapter Settings" Find USB WiFi Adapter under the name of "Realtek 8812AU/8811AU Wireless LAN 802.11ac USB NIC", put your mouse on it and click the right button of your mouse Press Enable to turn USB WiFi Adapter ON, then it works; If press Disable you will turn USB WiFi Adapter OFF and it will not work.

4.2.1 In case the LED of USB WiFi Adapter is on, this indicates that the driver is installed on your PC. You need to refer to the solution in Part 4.1.3 and Part 4.1.4

4.2.2 In case the LED of USB WiFi Adapter is NOT ON, this indicates that the driver is NOT installed correctly on your PC or adapter is not plug correctly on your PC. You need to refer to the solutions in Part 4.1.1, Part 4.1.2 and Part 4.1.3.
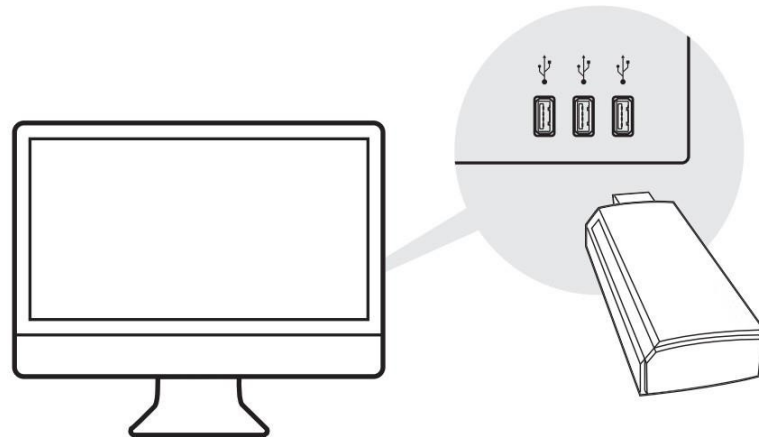
Part 2: Working on MAC OS X

We here take MAC OS X 10.9 as example for introducing the installation steps. Please note that the steps may vary slightly on other versions of MAC OS X.

1. **Hardware Installation**

   Please plug WiFi USB adapter to any USB port of your MAC, we suggesting plugging into the USB port with more open space for better WiFi signal reception.

2. **Install the Driver and Utility**

   2.1 Download the Driver and Utility

   2.2 Install the Driver and Utility

   2.2.1 After you download the driver, please click the below to unzip and extract the driver:

MAC OSX
Driver.zip

   2.2.2 After you unzip the driver, you may find that it includes drivers for different version of MAC OS X; in this case, please find the corresponding version of driver for your MAC OS X. And then find and click the Installer as figure below to start the installation:

Installer.pkg

   2.2.3 In the screen below, please click "Continue"
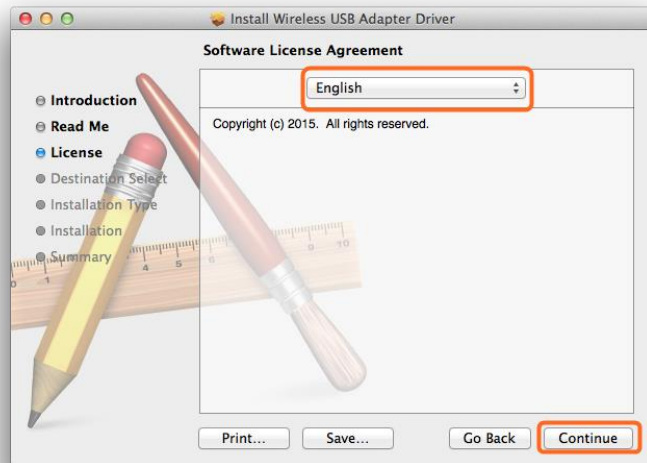
2.2.4   In the screen below, please also click "Continue":
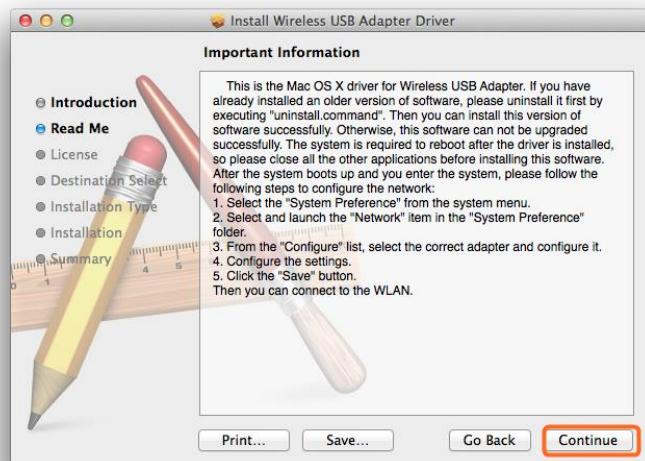
2.2.5   In the screen below, please select your language, we here take English as example and then click the "Continue" button:

2.2.6   In the screen below, please select "Agree"
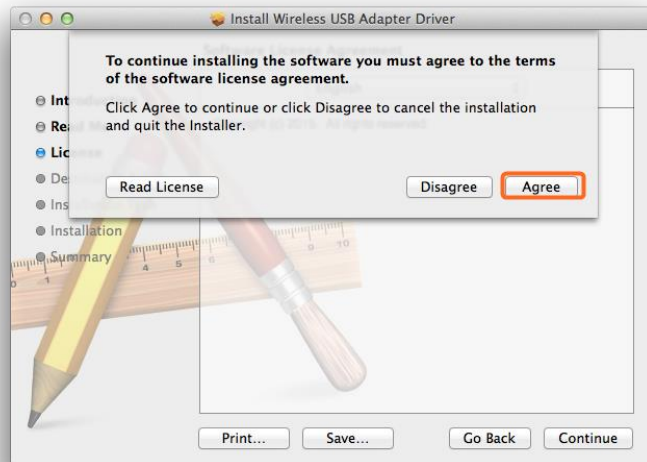
2.2.7   In the screen below, please firstly click "Install for all users of this computer" and then click the "Continue" button.

2.2.8 In the screen below, please click "Install":
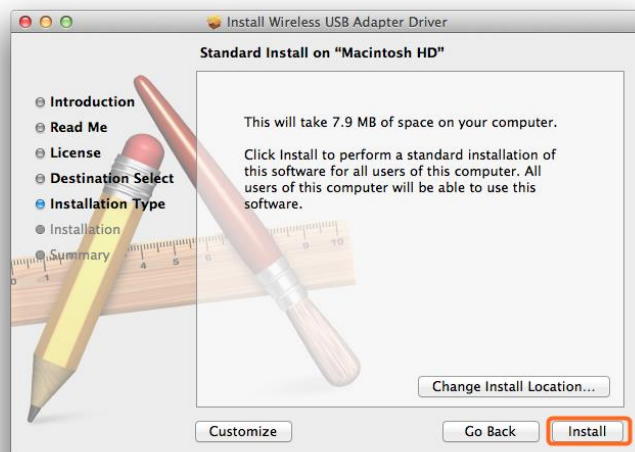
2.2.9 In case you have setup password for your MAC OS X, you need to input this pass word in the screen below and then click "Install Software":

2.2.10 In the screen below, please click "Continue Installation":

2.2.11 When you see the below screen, please wait for the driver to install automatically:
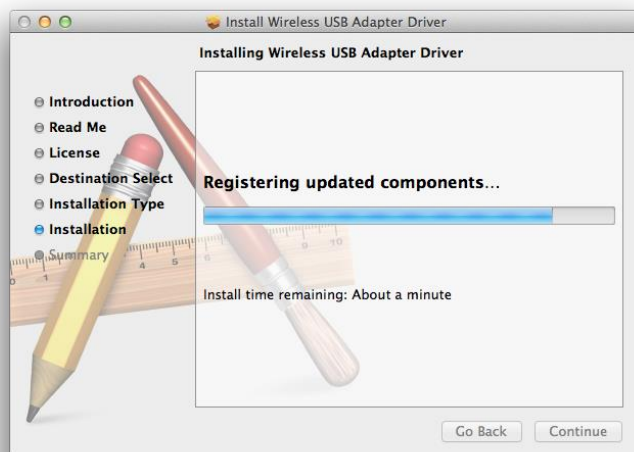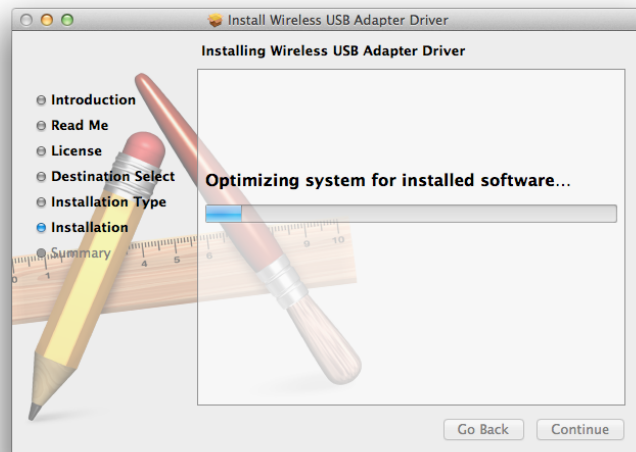
2.2.12 Congratulations! When you see the below interface, installation is successful, please click "Restart" to restart your MAC; After you restart your MAC, you are able to use this USB WiFi adapter.
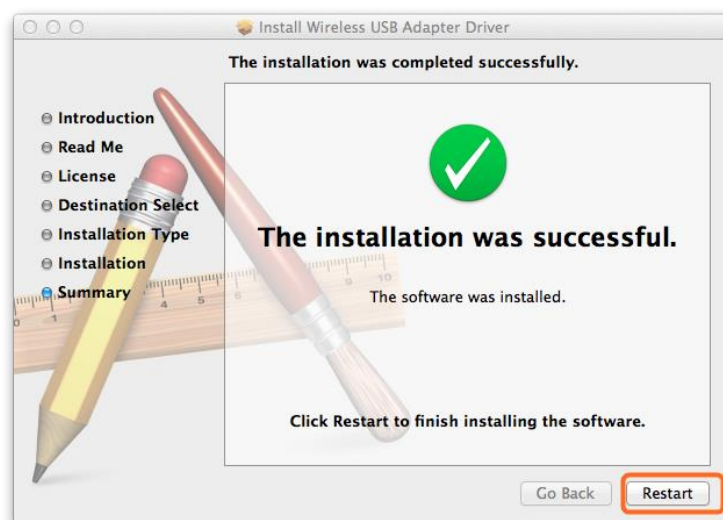
3. Join A Wireless Network

3.1 Turn the WiFi Adapter Integrated Inside your MAC Off

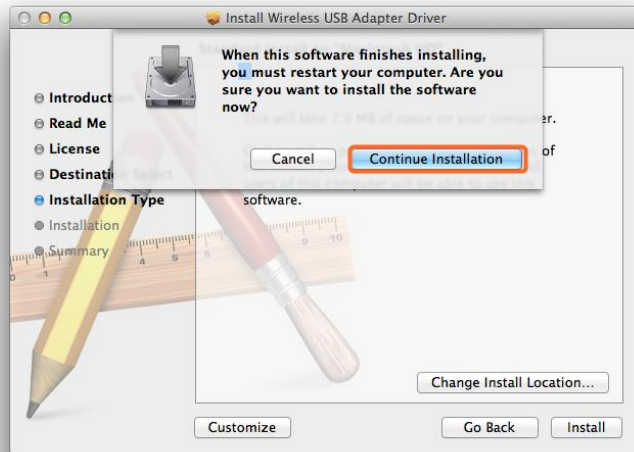3.1.1 Before using USB WiFi adapter, you can turn the WiFi adapter integrated inside your MAC OFF by clicking the "Turn Wi-Fi Off" button in the screen below, which is on the top right of your MAC desktop.
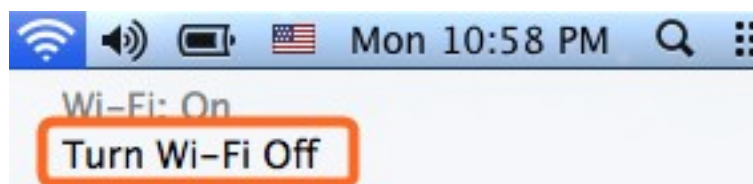
3.2 Join A New Wireless Network with USB WiFi Adapter

3.2.1 After you turn off the WiFi adapter integrated in your MAC, please go to your desktop and click the icon below to start the newly installed "Wireless

Network Utility":

3.2.2   In the interface below, please click "Available Network", find your Wi-Fi network, and then double click to select it:
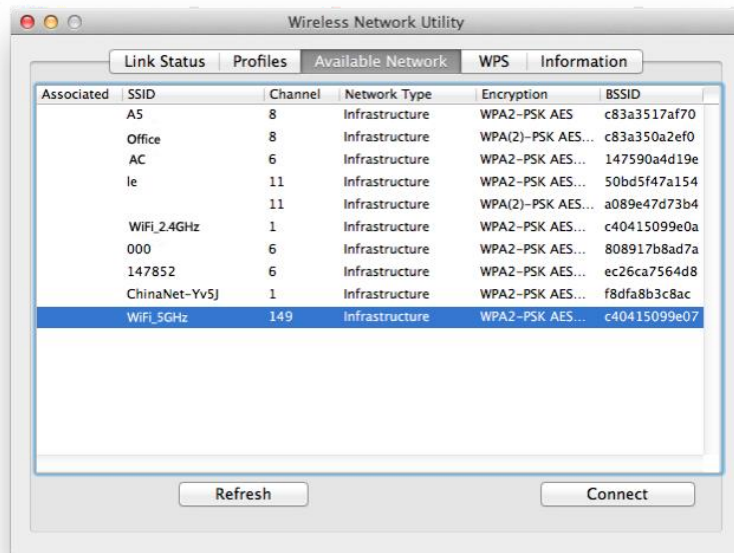
3.2.3   And then please input your Wi-Fi Network Key in the screen below, please make sure that you input the same Wi-Fi Network key twice, and then click the "OK" button.
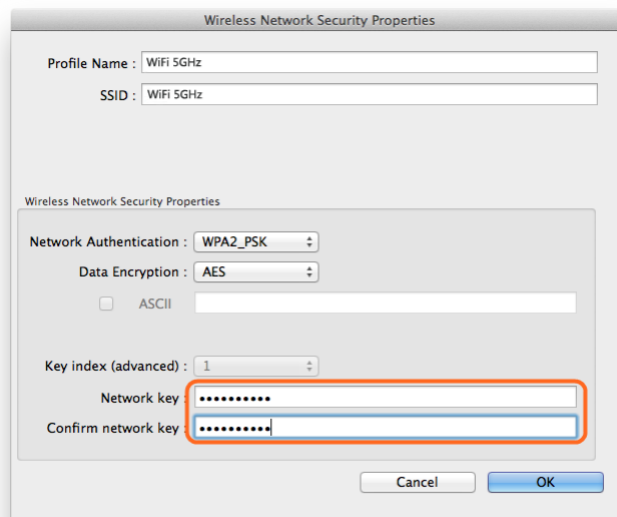
3.2.4   After you input the correct WiFi Network Key, your MAC will be connected to your Wi-Fi network successfully and you can see the below interface:
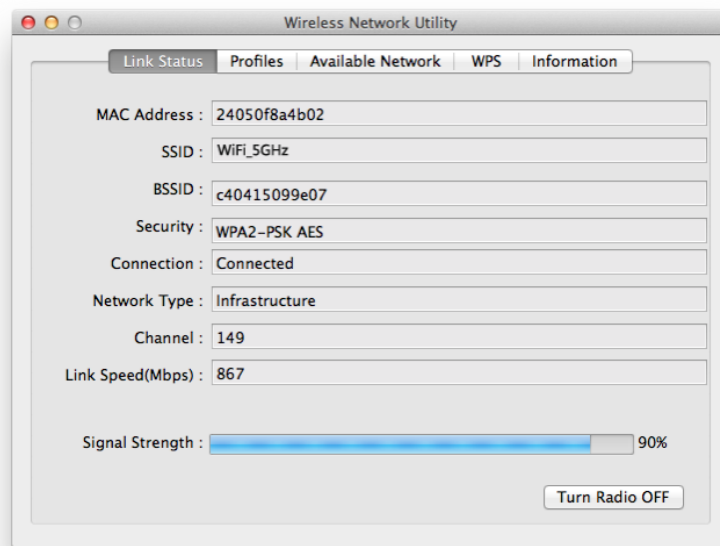
3.2.5 Also, in the "Available Network" in the screen below, you can see that the Wi-Fi network with "*" is the one that you are currently connected to:
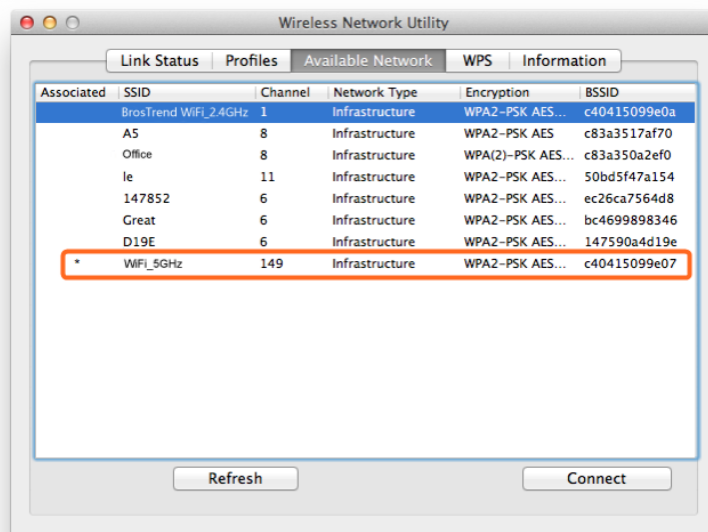
3.2.6 Manage My WiFi Network Profiles: For all the Wi-Fi networks which you connected to successfully, their network information including the Wi-Fi network names and Wi-Fi keys are stored in the utility automatically, you can shift between them by double clicking their name in the list below, you do not need to input Wi-Fi key again when you reconnect to them. Actually, this utility will enable your MAC to connect to one of them automatically for WiFi Internet connection every time when you start using your MAC again.
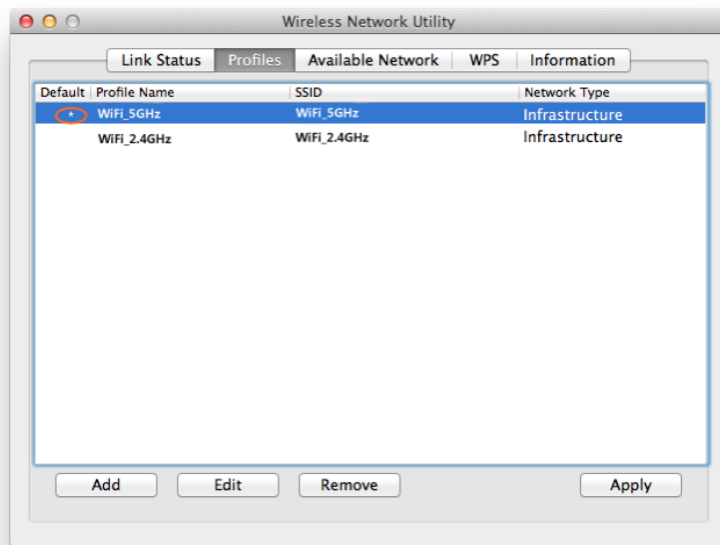
3.2.7   In the above interface, you can select a profile and:

    3.2.7.1 See that the one with "*" in the front is the WiFi network you are currently connected to.

    3.2.7.2 Press the "Apply" button and you will be connected to the selected WiFi network. No need to input WiFi network key again here.

    3.2.7.3 Press the "Remove" button, the selected Wi-Fi network will be deleted from your utility and your MAC will not connect to it automatically; in order to connect to it again, you need to go to the "Available Network", select this WiFi network and input WiFi Network Key to connect to it again

    3.2.7.4 Press the "Edit" button to change the WiFi Network Key information of this selected WiFi network in case its WiFi key is changed

3.3 Check my WiFi Connection Speed with my Wireless Router

3.3.1   By clicking the "Link Status" you will see the below screen with the connection information between USB WiFi Adapter and your WiFi router, including the Link Speed (also called connection speed), WiFi Signal Strength, WiFi Channel, SSID (WiFi network name), Security Type etc.
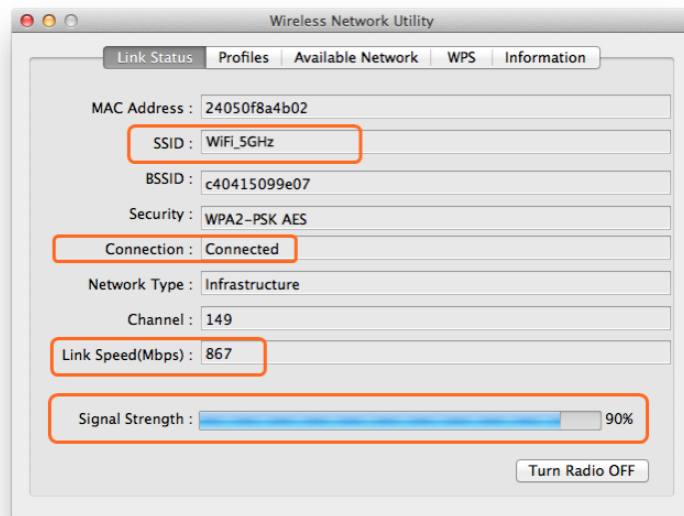
3.3.2   By clicking the "Open Network Preferences" in the screen below, you will see all the Network information about your MAC
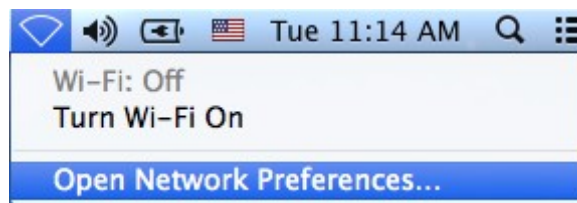
3.3.3   In the interface below, you can see all the WiFi adapters installed on your MAC, the one marked in green color is AC Wireless USB adapter, due to a displaying bug, it is being displayed as "802.11 N NIC"; actually, it is an "802.11 AC NIC", you can judge this by seeing its WiFi connection speed as we introduced in "Link Status" in Part 3.3.1 above.
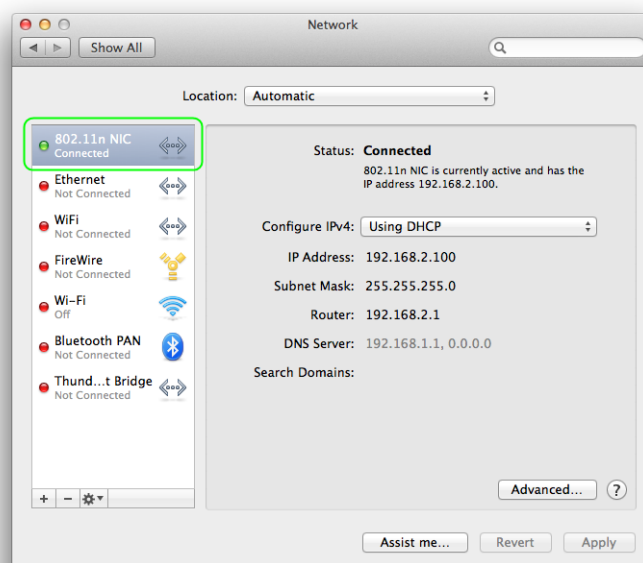
3.3.4   In the interface below, the one marked in Orange color is the Wi-Fi adapter integrated in your MAC, you can click the "Turn Wi-Fi ON/OFF" to control it here also.
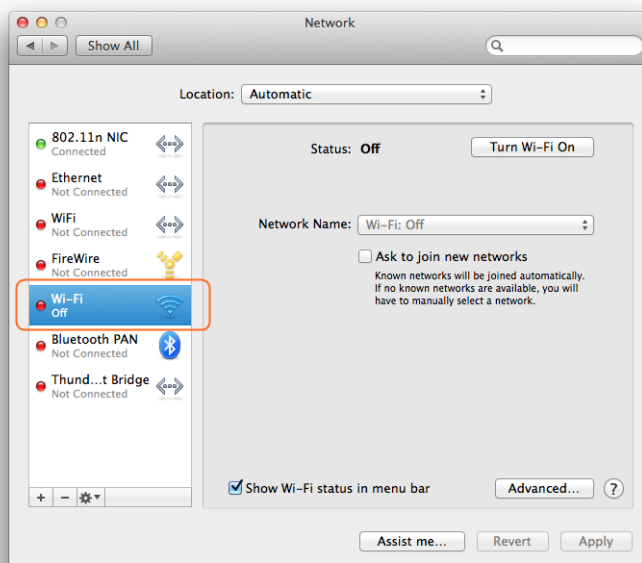
3.4 Turn Wi-Fi ON or OFF

3.4.1   In "Link Status" in the screen below, once you click the "Turn Radio Off", your USB WiFi Adapter will be turned off and you will be disconnected from the current WiFi network and not able to connect to other WiFi network either. You need to click this button to Turn it ON again to make it work for you. In case your USB WiFi adapter is not working properly, you can check this button also.
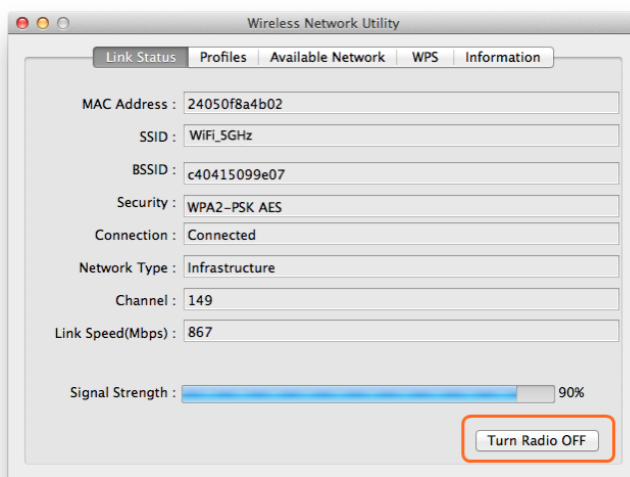
4.   Uninstall the Driver and Utility on MAC OS X

4.1 You can uninstall the USB WiFi Adapter driver and Wireless Network Utility by

using the software that you downloaded, please click the Software as below, follow the on screen instruction to uninstall it step by step:

Uninstall.pkg

Wireless Installation Considerations

The LevelOne wireless adapter lets you access your network using a wireless connection from virtually anywhere within the operating range of your wireless network. Keep in mind that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

1. Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.

2. Keep the number of walls and ceilings between the LevelOne adapter and other network devices to a minimum - each wall or ceiling can reduce your adapter's range from 3-30 feet (1-10 meters.) Position your devices so that the number of walls or ceilings is minimized.

3. A solid metal door or aluminum studs may have a negative effect on range. Try to position access points, wireless routers, and computers so that the signal passes through drywall or open doorways. Materials and objects such as glass, steel, metal, walls with insulation, water (fish tanks), mirrors, file cabinets, brick, and concrete will degrade your wireless signal.

4. Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate RF noise.

5. If you are using 2.4 GHz cordless phones or X-10 (wireless products such as ceiling fans, lights, and home security systems), your wireless connection may degrade dramatically or drop completely. Make sure your 2.4 GHz phone base is as far away from your wireless devices as possible. The base transmits a signal even if the phone in not in use.

Who uses wireless?

Wireless technology as become so popular in recent years that almost everyone is using it, whether it's for home, office, business, LevelOne has a wireless solution for it.

Home

• Gives everyone at home broadband access
• Surf the web, check email, instant message, and etc. • Gets rid of the cables around the house
• Simple and easy to use

Small Office and Home Office

• Stay on top of everything at home as you would at office
• Remotely access your office network from home
• Share Internet connection and printer with multiple computers • No need to dedicate office space

Where is wireless used?
Wireless technology is expanding everywhere not just at home or office. People like the freedom of mobility and it's becoming so popular that more and more public facilities now provide wireless access to attract people. The wireless connection in public places is usually called "hotspots".

Using a LevelOne USB adapter with your laptop, you can access the hotspot to connect to Internet from remote locations like: airports, hotels, coffee shops, libraries, restaurants, and convention centers.

Wireless network is easy to setup, but if you're installing it for the first time it could be quite a task not knowing where to start. That's why we've put together a few setup steps and tips to help you through the process of setting up a wireless network.

Tips
Here are a few things to keep in mind, when you install a wireless network.

Centralize your router or access point
Make sure you place the router/access point in a centralized location within your network for the best performance. Try to place the router/access point as high as possible in the room, so the signal gets dispersed throughout your home. If you have a two-story home, you may need a repeater to boost the signal to extend the range.

Eliminate Interference
Place home appliances such as cordless telephones, Nanowaves, and televisions as far away as possible from the router/access point. This would significantly reduce any interference that the appliances might cause since they operate on same frequency.

Security
Don't let your next-door neighbors or intruders connect to your wireless network. Secure your wireless network by turning on the WPA or WEP security feature on the router. Refer to product manual for detail information on how to set it up.

Troubleshooting

This chapter provides solutions to problems that can occur during the installation and operation of the WUA-1810E. Read the following descriptions if you are having problems. The examples below are illustrated in Windows® 7. If you have a different operating system, the process on your computer will be similar.

1. How do I know if my adapter is installed properly?

Go to Start > Computer (right-click) > Properties.

This will bring up the System settings under the Windows Control Panel.
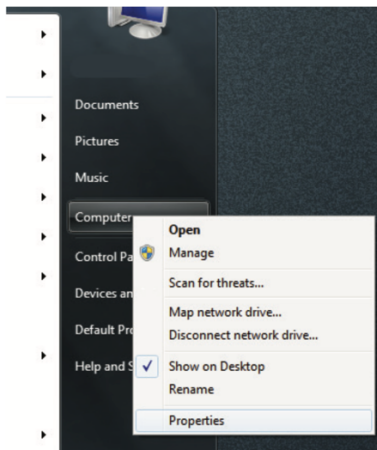
Click Device Manager.
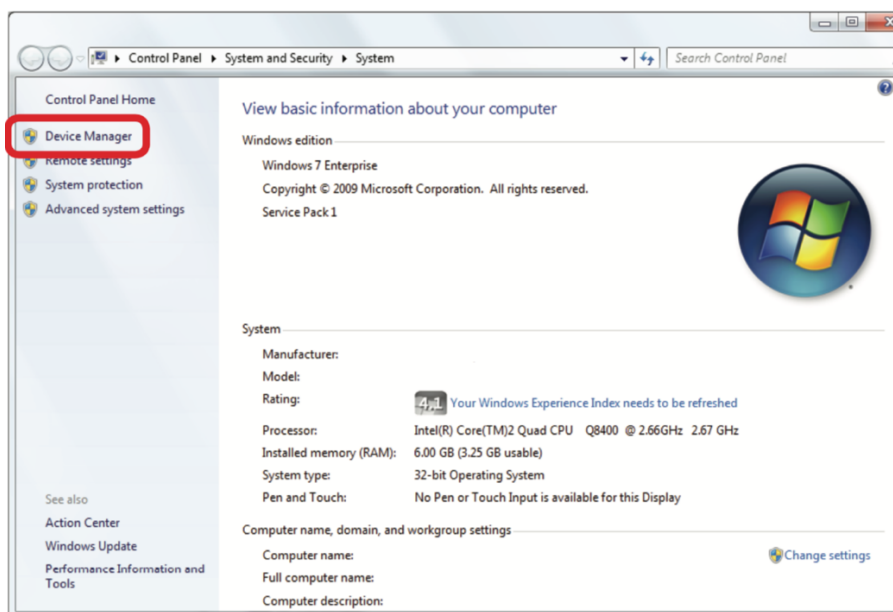
Click the + sign next to Network Adapters.

Right-click on Realtek 8812BU Wireless LAN 802.11ac USB NIC.

Select Properties to check that the drivers are installed properly.
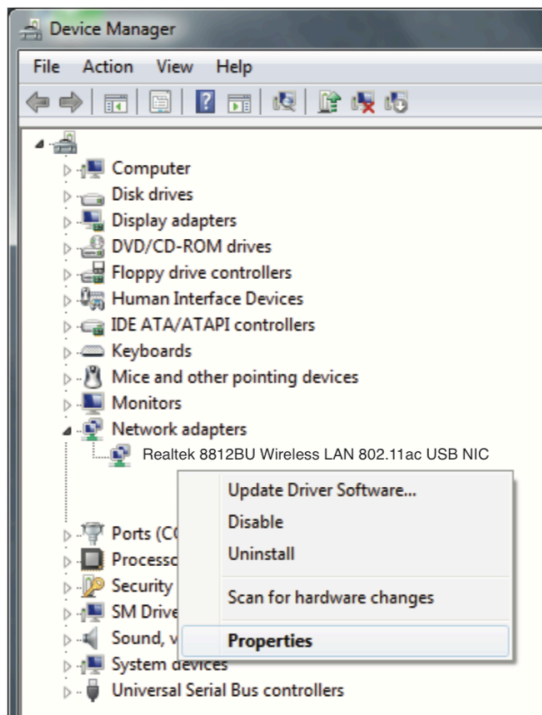
Look under Device Status to check that the device is working properly. Click OK to continue.
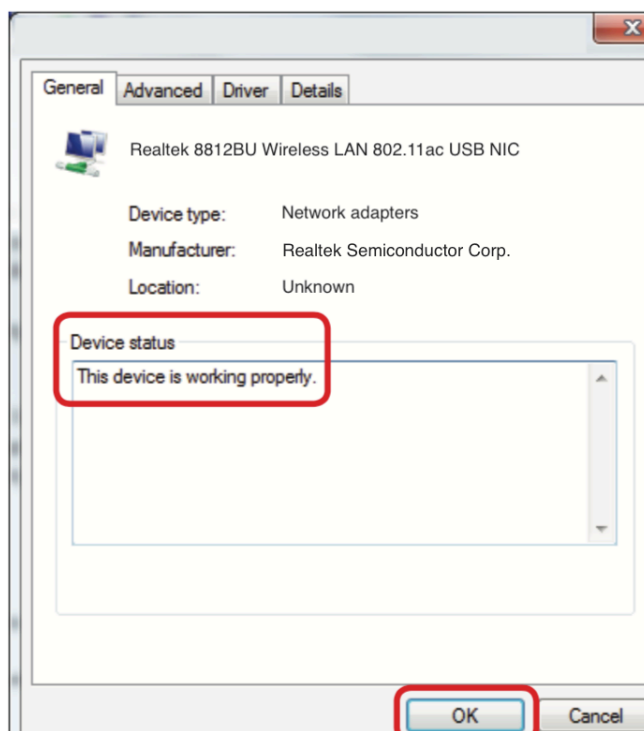
2. The computer does not recognize the WUA-1810E.

Make sure that the WUA-1810E is properly seated in the computer's USB port.

If Windows does not detect the hardware upon insertion of the adapter, make sure to completely remove drivers that were previously loaded.

3. The computer with the WUA-1810E installed is unable to connect to the wireless network and/or the Internet.

   • Check that the LED indicators for the broadband modem are indicating normal activity. If not, there may be a problem with the broadband connection.

   • Check that the LED indicators on the wireless router are functioning properly. If not, check that the AC power and Ethernet cables are firmly connected.

• Check that the IP address, subnet mask, gateway, and DNS settings are correctly entered for the network

System Specifications

Standards	IEEE 802.11a/b/g/n/ac IEEE 802.11ac Wave 2 MU-MIMO
Processor	RTL8812BU
Connector	USB 3.0
Indicator	WiFi LED Status indicator
Power Input	5V/500mA
Data Rate	802.11ac 866.7, 520, 433.3, 390, 325, 292.5, 260, 195, 130, 97.5, 65, 32.5 Mbps 802.11n 300, 270, 240, 180, 120, 90, 60, 30 Mbps 144.4, 130, 115.6, 86.7, 57.8, 43.3, 28.9, 14.4 Mbps 802.11g 54, 48, 36, 24, 18, 12, 9, 6 Mbps 802.11b 11, 5.5, 2, 1 Mbps
Operating Temperature (°C)	0°C~40°C
Operating Humidity (Non-condensing)	10%~90%
Storage Temperature (°C)	-40°C ~ 70°C
Storage Humidity (Non-condensing)	5%~90%
Wireless Encryption	WEP 64/128-bit WPA-PSK-TKIP_AES WPA2-PSK-TKIP_AES
Wireless Receive Sensitivity(dBm)	802.11b (2.4GHz) Horizontal : -56.16dBm Vertical : -56.64dBm 802.11g (2.4GHz) Horizontal : -46.87dBm Vertical : -47.65dBm 802.11n20 (2.4GHz) Horizontal : -55.27dBm Vertical : -55.31dBm 802.11n40 (2.4GHz) Horizontal : -56.17dBm Vertical : -56.57dBm 802.11a (5GHz) Horizontal : -43.82dBm Vertical : -42.52dBm

	802.11n HT20 (5GHz) Horizontal : -46.87dBm Vertical : -47.65dBm 802.11n HT40 (5GHz) Horizontal : -46.40dBm Vertical : -46.37dBm 802.11ac HT80 (5GHz) Horizontal : -46.39dBm Vertical : -45.50dBm
Wireless Channels	Country Region BRAZIL 2.412GHz~2.472GHz: CH1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 5.18GHz~5.32GHz: CH 36, 40, 44, 48, 52, 56, 60, 64 5.5GHz~5.7GHz: CH 100, 104, 108, 116, 120, 124, 128, 132, 140 5.745GHz~5.825GHz: CH 149, 153, 157, 161, 165 Country Region CHINA 2.412GHz~2.472GHz: CH1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 5.18GHz~5.32GHz: CH 36, 40, 44, 48, 52, 56, 60, 64 5.745GHz~5.825GHz: CH 149, 153, 157, 161, 165 Country Region ETSI 2.412GHz~2.472GHz: CH1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 5.18GHz~5.32GHz: CH 36, 40, 44, 48, 52, 56, 60, 64 5.5GHz~5.7GHz: CH 100, 104, 108, 116, 120, 124, 128, 132, 140 Country Region INDIA 2.412GHz~2.472GHz: CH1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 5.18GHz~5.32GHz: CH 36, 40, 44, 48, 52, 56, 60, 64 5.745GHz~5.825GHz: CH 149, 153, 157, 161, 165 Country Region UAE 2.412GHz~2.472GHz: CH1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13 5.18GHz~5.32GHz: CH 36, 40, 44, 48, 52, 56, 60, 64 5.5GHz~5.7GHz: CH 100, 104, 108, 116, 120, 124, 128, 132, 140 5.745GHz~5.825GHz: CH 149, 153, 157, 161, 165 Country Region USA 2.412GHz~2.462GHz: CH1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 5.18GHz~5.32GHz: CH 36, 40, 44, 48, 52, 56, 60, 64 5.5GHz~5.7GHz: CH 100, 104, 108, 116, 120, 124, 128, 132, 140 5.745GHz~5.825GHz: CH 149, 153, 157, 161, 165

Wireless EIRP(dBm)	Antenna gain 5dBi 15.57dBm(802.11b) 13.57dBm(802.11g) 12.57dBm(802.11n20) 11.57dBm(802.11n40) 15.48dBm(802.11a) 13.49dBm(802.11n) 11.50dBm(802.11ac)
Wireless Antenna	5dBi Omnidirectional Detachable Antenna x 2 (2T2R)
Wireless Frequency Band	2.4GHz & 5GHz
Wireless Modulation	DSSS, OFDM
Features General	300Mbps@2.4GHz 867Mbps@5GHz
Performance Operating Distance	10m
Physical Specifications Dimensions (W x D x H mm)	26.5 × 62.5 × 14.6 mm
Physical Specifications Weight (g)	100g
Approval and Compliance EMI/EMS	CE
Approval and Compliance Safety	LVD, RED
Approval and Compliance Environmental Test	RoHS
Operation Systems	Windows XP/Vista/7/8/10 macOS 10.6/7/8/9/10/11/12/13/14/15 Linux (Only basic versions)

CE

Compliance Statement

CE marking is a certification mark that indicates conformity with health, safety, and environmental protection standards for products sold within the European Economic Area (EEA).The CE marking is also found on products sold outside the EEA that have been manufactured to EEA standards. This makes the CE marking recognizable worldwide even to people who are not familiar with the European Economic Area.

WEEE

WEEE is waste electrical and electronic equipment. It is end-of-life electrical and electronic equipment and covers virtually everything with a plug or battery. ... The EC introduced the WEEE Directive in 2002 to address the environmental impacts of unwanted electrical and electronic equipment at end-of-life disposal.