

# 802.11n 1x1 Wireless LAN USB module

# WLU5110-D50(ROHS)

**User's Manual** 

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## **Hardware Quick Installation Guide**

Installing the 802.11n 1x1 Wireless LAN USB module

- 1. Power down the computer.
- 2. Plug the 802.11n 1x1 Wireless LAN USB module board to motherboard slot
- 3. Connect antennas used I-PEX connector for WiFi antenna.
- 4. Power on the computer.



Un-installing the 802.11n 1x1 Wireless LAN USB module

- 1. Power down the computer
- 2. Removed WiFi antenna
- 3. Carefully removed the802.11n 1x1 Wireless LAN USB module from the motherboard slot.
- 4. Power on the computer.

# INTRODUCTION

The 802.11n 1x1 Wireless LAN USB module is a device that allows you connect your computer to a wireless local area network (LAN). A wireless LAN allows your system to use wireless Radio Frequency (RF) technology to transmit and receive data without physically attaching to the network. The Wireless protocols that come with this product ensure data security and isolation from interference generated by other radio frequencies. This card also allows you to take full advantage of your computer's mobility with access to real-time information and online services anytime and anywhere. In addition, this device eliminates the bother of pulling cable through walls and under furniture. It even allows you to place your system in locations where cabling is impossible. Modifying and augmenting networks has never been so easy.

## **Wireless Network Options**

### The Peer-to-Peer Network

This network installation lets you set a small wireless workgroup easily and quickly. You can share files and printers between each PC and laptop.



You can also use one computer as an Internet Server to connect to a wired global network and share files and information with other computers via a wireless LAN.



The Access Point Network The network installation allows you to share files, printers, and Internet access much more conveniently. With Wireless LAN Cards, you can connect wireless LAN to a wired global network via an Access Point.



# SOFTWARE INSTALLATION

1. Exit all Windows programs. Insert the included CD-ROM into your computer. The CD-ROM will run automatically.

2. When the License Agreement screen appears, please read the contents and select "I accept the terms of the license agreement " then click Next to continue.



- 3. Select the check box to choose a Configuration Tool from the listed two choices.
- Configuration Tool: Choose to use our configuration utility.
- Microsoft Zero Configuration Tool: Choose to use Windows XP's built-in Zero Configuration Utility (ZCU).

Click Next to continue.



4. There are two modes for you to choose in this screen, either choose WiFi mode or performance mode (TxBurst mode). This mode selection screen is set for the default mode shown in the utility screen, you can still change its mode later in the utility screen. Click Next to continue.

Intelligent wireless card - I	InstallShield Wizard	
Setup Type Select the setup type that best	t suits your needs.	
	Choose Configuration TxBurst or WiFi	
	Optimize for W Filmode	
	Upimoa ior performence mode	
InstallShield	< Back Next >	Cancel

5. When you are prompted the following message, please click Install to begin the installation.

Intelligent wireless card - Ins	tallShield Wizard 🛛 🔀			
Ready to Install the Program The widerd is ready to begin installation.				
	Dick Install to begin the installation.			
	If you want to review of change any of your installation settings, click Back. Click Cancel to exit the wizard			

6. When the following screen appears, click Finish to complete the software installation.



# **NETWORK CONNECTION**

Once the device driver is well installed, a network setting described in the following should be also established.

- (In Windows 2000) Go to Start → Settings → Control Panel → Network and Dial-up Connections Local Area Connection → Properties.
- (In Windows XP) Go to Start → Control Panel → Network and Internet Connections → Network Connections → Wireless Network Connection → Properties.



2. Make sure that all the required components are installed.

🕹 Wireless Network Connection 3 Properties 👘 🕐 🔀
General Advanced
Cornect using
📑 11b/g/n 1T2R WLAN Mini Card Configure
This connection uses the following items:
Elient for Microsoft Networks     Sector And Antipathing Anti
Image: Second Printer Sharing for Microsoft Networks           Image: Second Printer Scheduler         Image: Second Printer Scheduler
Install Uninstall Properties
Allows your computer to access resources on a Microsoft network.
<ul> <li>Show ican in notification area when connected</li> <li>Notity me when this connection has limited or no connectivity</li> </ul>
OK Cancel

3. If any components are missing, click on the Install... button to select the Client/Service/Protocol required. After selecting the component you need, click Add... to add it in.

Select Network Component Type 🛛 🛛 🔀
Lick the type of network component you want to instal:
P Clent
E Service
* Protocol
Description
Description
A dient provides access to computers and files on the patricip in the patricip in the second se
the network you are connecting to
Adt Cancel

4. For making your computer visible on the network, make sure you have installed File and Printer Sharing for Microsoft Networks.

## **IP Address**

Note: When assigning IP Addresses to the computers on the network, remember to have the IP address for each computer set on the same subnet mask. If your Broadband Router use DHCP technology, however, it won't be necessary for you to assign Static IP Address for your computer.

1. To configure a dynamic IP address (i.e. if your broadband Router has the DHCP technology), check the Obtain an IP Address Automatically option.

2. To configure a fixed IP address (if you broadband Router is not DHCP supported, or when you need to assign a static IP address), check the Use the following IP address option. Then, enter an IP address into the empty field; for example, enter 192.168.1.254 in the IP address field, and 255.255.255.0 for the Subnet Mask.

Internet Protocol (TCP/IP) Properties 🛛 🛛 🛛	internet Protocol (TCP/IP) Properties 🛛 🛛 🛛 🔀
General Alternate Configuration	General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.	You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically	Obtain and address automatically
O Use the torowing in address.	<ul> <li>Use the following IP address:</li> </ul>
IP address:	IP addiecs: 192 . 168 . 1 . 254
Subnet mask:	Self-sel mask: [255 . 255 . 0
Defaultigateway:	Delauli gateway:
Obtain DNS server address automatically	Obtain DNS server address automatically
O Use the following DNS server addresses:	Use the following DNS server addresses:
Preferred DNS server:	Preferred DNS server:
Alternate DNS server:	Alienete DNS server:
Advanced .	Advanced .
OK Cancel	OK Cancel

## **CONFIGURATION UTILITY**

After the Wireless adapter has been successfully installed, users can use the included Configuration Utility to set their preference. Go to Start $\rightarrow$  (All) Programs $\rightarrow$  Ralink Wireless  $\rightarrow$ Ralink Wireless Utility.



You can also open the Configuration Utility by double clicking the icon or right clicking to select Launch Config Utilities.

Launch Config Utilities
Use Zero Configuration as Configuration utility
Switch to AP Mode
Exit 🥺

## Intelligent Wireless Utility

### Profile

Profile can book keeping your favorite wireless setting among your home, office, and other public hot-spot. You may save multiple profiles, and activate the correct one at your preference. The Profile manager enables you to Add, Edit, Delete and Activate profiles.

Profile	Network .	ر Advanced	) Statistics	NAMA.	<b>O</b> WPS	<b>?</b>
	F	rafile List				
					Profile Name >>	
					<< C122	
					Network Type >>	
					Authentication >>	
					Encryption >>	
					Use 802.1x >>	
					Channel >>	
					Power Save Mode >>	
					1 SWC1 Save Inside	
					TV DOWER SS	
					Tx Power >>	
					Tx Power >> RTS Threshold >>	
					Tx Power >> RTS Threshold >> Fragment Threshold >>	
<b>6</b> 00	Eat	Dele	ste Ac	otivate	Tx Power >> RTS Threxhold >> Fragment Threshold >>	
Add Status	Edit >> 802.11g-AP -V	Dele	ste Ac	stivate	Tx Power >> RTS Threshold >> Fragment Threshold >> Unk Quality >> 100%	
Add Status Extra Info	Edit >> 802.11g-AP -W >> Link to Up [7:8	Dela Vireless <> 0D- Power:100%	ste Ac E0-98-88-88-02	stivate	Tx Power >> RTS Threshold >> Fragment Threshold >> Link Quality >> 100% Signal Strength 1 >> 47%	_
Add Status Extra Info Channel	Edit >> 802.11g-AP -V >> Link is Up [7:9 >> 2 <> 2417 MP	Dele Vireless <> 0D- Power:100% Hz	500 AC	stivate	Tx Power >> RTS Threshold >> Fragment Threshold >> Link Quelity >> 100% Signal Strength 1 >> 47% Signal Strength 2 >> 55%	
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Add Status Extra Info Channal Authentication Encryption	Edit >> 802.11g-AP -V >> Link is Up [73 >> 2 <> 2417 M >> Unkrown >> None	Dele Virelass «> 00- Power:100%) Hz	ste Ac E0-98-88-88-02	stivate	Tx Power >> RTS Threshold >> Fragment Threshold >> Link Quality >> 1008 Signal Strength 1 >> 47% Signal Strength 2 >> 55% Signal Strength 3 >> 81% Notes Strength >> 26%	-
Add Status Extra Info Channel Authentication Recryption Network Type	Edit >> 802.11g-AP -V >> Link is Up (TX) >> 2 <> 2417 M >> Unknown >> Unknown >> Infrestructure >> Infrestructure	Dele Virelass «> 00- Power: 100%] Hz 6	:te Ac	stivate	Tx Power >> RTS Threshold >> Fragment Threshold >> Clink Quality >> 100% Signal Strength 1 >> 47% Signal Strength 2 >> 55% Signal Strength 2 >> 61% Notes Strength >> 26% Transmit	
Add Status Extra Info Channal Authentication Encryption Network Type IP Address	Edit >> 802.11g-AP -W >> Link is Up [7:9 >> 2 <> 2417 M >> Unknown >> None >> Infrestructure >> 192.168.1.03 >> 265.958.255.1	Dels Vireless «> 00- Power: 100%] 12 c	3te Ac E0-98-88-88-02	xtivate	Tx Power >> RTS Threshold >> Fragment Threshold >> Link Quality >> 100% Signal Strength 1 >> 47% Signal Strength 2 >> 55% Signal Strength 3 >> 81% Note Strength >> 25% Transmit Link Speed >> 54.0 Mbps Meta	
Add Status Extra Info Channel Authentication Encryption Network Type IP Address Sub Mask	Edit >> 802.11g-APV >> Link is Up [7:8 >> 2 <> 2412 M >> Uhknown >> None >> Infrestructur >> 192.168.1.33 >> 255.255.255.0	Dele Vireless <> 0D- Power: 100% Hz C	ste Ac E0-96-88-88-02	xtivate	Tx Power >> RTS Threshold >> Fragment Threshold >> Link Quality >> 100% Signal Strength 1 >> 47% Signal Strength 2 >> 55% Signal Strength 2 >> 55% Signal Strength 3 >> 81% Note Strength 3 >> 81% Link Speed >> 54.0 Mbps Throughput >> 0.000 Kbps 2.0	
Add Status Extra Info Channel Authentication Encryption Network Type IP Address Sub Mesk Sub Mesk	Edit >> 802.11g-AP -V >> Link IS Up [73 >> Z <> 2417 AV >> Unknown >> None >> Infrestructure >> 192.168.1.33 >> 255.255.255.1 >>	Dele Vireless <> 00- Power:100% 12 6	ete Ac	stivate	Tx Power >> RTS Threshold >> Fragment Transmit Link Speed >> 54.0 Mbps Throughput >> 0.000 Kbps Link	40 p2
Add Status Extra Info Channel Authentication Encryption Network Type IP Address Sub Mask Sefault Gateway	Edit >> 802.11g-AP -W >> Link is Up [T35 >> 2 <> 2417 W >> Unknown >> None >> Infrastructur >> 192.168.1.33 >> 255.255.255.0 >> HT -	Dele Vireless <> 0D- Power: 100%] Hz	ste Ac	otivate	Tx Power >> RTS Threshold >> Fragment Threshold >> Inik Quality >> 100% Signal Strength 1 >> 47% Signal Strength 2 >> 55% Signal Strength 2 >> 55% Signal Strength 3 >> 81% Notes Strength >> 26% Transmit Link Speed >> 54.0 Mbps Throughput >> 0.000 Kbps Receive Link Speed >> 1.0 Mbps Methods Methods Receive Link Speed >> 1.0 Mbps Methods Receive Link Speed >> 1.0 Mbps Methods Link Speed >> 1.0 Mbps Methods Receive Link Speed >> 1.0 Mbps Methods Receive Link Speed >> 1.0 Mbps Methods Link Speed >> 1.0 Mbps Link Speed >> 1.0 Mbps	
Add Status Extra Info Channel Authentication Encryption Network Type IP Address Sub Mask Vefault Gateway BW >> n/a	Edit >> 802.11g-AP -W >> Link is Up (Tx) >> 2 <> 2417 MP >> Uhknown >> Infrestructum >> Infrestructum >> 192.168.1.33 >> 255.255.255.255.1 >> HT -	Dele Vireless> 0D- Power: 100%] 12 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	2 n/a	stivate	Tx Power >> RTS Threshold >> Fragment Threshold >> Clink Quelity >> 100% Signal Strength 1 >> 47% Signal Strength 2 >> 55% Signal Strength 2 >> 61% Noise Strength >> 26% Transmit Link Speed >> 54,0 Mbps Throughput >> 0.000 Kbps 2,0 Kbp Receive Link Speed >> 1.0 Mbps Throughput >> 9,920 Kbps	

Profile Tab	
Profile Name	You may enter a distinctive name of profile in this column. The default is PROF# (# 1, #2, #3)
SSID	The SSID is the unique name shared among all points in your wireless network.
Network Type	Shows the network type of the device, including infrastructure.
Authentication	Shows the authentication mode.
Encryption	Shows the encryption type.
Use 802.1x	Whether or not use 802.1x feature.
Channel	Shows the selected channel that is currently in use. (There are 13 channels available, depending on the country.)
Power Save Mode	Choose from CAM (Constantly Awake Mode) or Power Saving Mode.
Tx Power	Transmit power, the amount of power used by a radio transceiver to send the signal out.
RTS Threshold	Shows the RTS Threshold of the device.
Fragment Threshold	Shows the Fragment Threshold of the device.
Add	Click to add a profile from the drop-down screen. System Configuration tab:

Network The Network page displays the information of surrounding APs from last scan result. The tab lists the information including SSID, Network type, Channel, Wireless mode, Security-Enabled and Signal.

18 RaUI								2
Profile	Network	Advanced	) Statistics	way.	WW.	<b>Ø</b> WPS		🕜 💡 R
Sorted by >>	🥥 SSID	0	Channel	AP 14	) Signa	1	🔲 Show d	Bm
<b>801 11</b> ~ (D			ibii f		100%	_		
aaa			10		558	_		
Albert Y-200			and a lateral state		768	_		_
4P			40 16		500	_		-
AD1			de la	UUUUUUU	400%	-		10
4004			100	99	100%	_		
orra.			06	590	70%			
auas			11	59	B1%			_
Broadcom			1011	59	B1%			-
ski			1011	69	76%			-
TAND			100	99 1	34%			×
Rescan	Connec	t Add to	Profile					
Statu	s >> 802.11g-AP	-Wireless <>00	HED- <b>58-</b> 88-88-0)	z			Link Quality >> 100%	
Extra Ini	ta 🏊 Link is Up (	TxPower:100%]					Signal Strength 1 >> 50%	
Chann	el >> 2 <> 2417	MH2					Stenal Strongth 2 >> 50%	
Authenticatio	n >> Unknown						Signal Strength 3 >> 70%	
Encryptic	in >> Nane						Noise Strength >> 26%	
ID Addres	e >> intrastruct	ture no				Transmit		
Sub Mer	is >> 192,100,1	50				Link Spee	d >> 54.0 Mbps	13.5
Default Gatewa	N) >>					Inroughpu	7 N 0.000 R 0 2	480. 
	——— H1	r				Receive		
BW >⊁ nJa		SNRO	⊳ n/a			Link Speed	d >> 1.0 Waps	ЭX
GI >> nJa	MCS >> n	/a SNR1	⊷ n/a			Throughpu	t >> 9.424 Kbps 1. M	770 bps

Network Tab	
Sorted by	Indicate that AP list are sorted by SSID, Channel or Signal.
Show dBm	Check the box to show the dBm of the AP list.
SSID	Shows the name of BSS network.
Network Type	Network type in use, Infrastructure for BSS.
Channel	Shows the currently used channel.
Wireless mode	AP support wireless mode. It may support 802.11a, 802.11b, 802.11g or 802.11n wireless mode.

Encryption	Shows the encryption type currently in use. Valid value includes WEP, TKIP, AES, and Not Use.
Signal	Shows the receiving signal strength of specified network.
Rescan	Click to refresh the AP list.
Connect	Select an item on the list and then click to make a connection.
Add to Profile	Select an item on the list and then click to add it into the profile list.
Link status	Status >> 102, 11g, 40 - Witniess      -> 00, ED-98-88-88-02     Line Quarty >> 100, ED-98-88-88-02       Extra Info >> Line Quarty >> 1, 40, ED (D-Drower-100R)     Signal Stangth 1 >> 07N       Channel >> 2, 20417 Allia     Signal Stangth 2 >> 100       Authentication >> Line Received     Signal Stangth 2 >> 100       Encryption >> Rone     Note Strangth >> 20X       Network Type >> Informatrusture     Note Strangth >> 20X       Line Quarty >> 102, 581, 203     Line Special >> 544 Mags       Sub Most >> 205, 255, 255, 215, 0     Line Special >> 544 Mags       Default Gateway >>     Informatrusture       HT     Receive       BW >> n/a     SWID >> n/a       Gil >> n/a     SWIS >> n/a
Status	Shows the current connection status. If there is no connection existing, it will show Disconnected.
Extra Info	Shows the link status.
Channel	Shows the current channel in use.
Authentication	Authentication mode used within the network, including Unknown, WPA-PSK, WPA2-PSK, WPA and WPA2.
Encryption	Shows the encryption type currently in use. Valid value includes WEP, TKIP, AES, and Not Use.
Network Type	Network type in use, Infrastructure for BSS.
IP Address	Shows the IP address information.
Sub Mask	Shows the Sub Mask information.
Default Gateway	Shows the default gateway information.
Link Quality	Shows the connection quality based on signal strength and

	TX/RX packet error rate.					
Signal Strength 1, 2 and 3	Shows the Receiving signal strength, you can choose to display as percentage or dBm format.					
Noise Strength	Shows the noise signal strength.					
Transmit         Shows the current Link Speed and Throughp transmit rate.						
Receive Shows the current Link Speed and Throughput of receiver rate.						
Link Speed	Shows the current transmitting rate and receiving rate.					
Throughput	Shows the transmitting and receiving throughput in the unit of K bits/sec.					

## AP information

When you double click on the intended AP, you can see AP's detail information that divides into three parts. They are General, WPS, CCX information. The introduction is as following:

General	General         WPS         CCX           SSID >> 002,11g-4P -Wireless	
	General information contain AP's SSID, T Authentication Type, Encryption Type, Channel, Beacon Interval, Signal Strength and Supported Ra OK: Click this button to exit the information scree	MAC address, Network Type, ates. en.

WPS		
	General WPS	ccx
	Authentication Type >> Unknown	State >> Unknown
	Encryption Type >> None	Version >> Unknown
	Config Methods >> Linknown	AP Setup Locked >> Linknown
	Bevice Password ID >>	UUIDE >> Unknown
	Selected Registrer >> Unknown	Pf Banda >> Unknown
		OK
	WPS information contain Config Methods, Device Version, AP Setup Locke	s Authentication Type, Encryption Type, Password ID, Selected Registrar, State, d, UUID-E and RF Bands.
	Authentication Type: 7 modes supported by RaC and WPA system.	There are four types of authentication onfig. They are open, Shared, WPA-PSK
	Encryption Type: For o selection of encryption WPA2, WPA-PSK and encryption type supports	pen and shared authentication mode, the type are None and WEP. For WPA, WPA2-PSK authentication mode, the both TKIP and AES.
	<b>Config Methods</b> : Corres an Enrollee for adding ex	pond to the methods the AP supports as ternal Registrars.
	Device Password ID: specific password that the	Indicate the method or identifies the selected Registrar intends to use.
	Selected Registrar: Indi Registrar to add an E "FALSE".	cate if the user has recently activated a nrollee. The values are "TRUE" and
	State: The current conf "Unconfigured" and "Con-	iguration state on AP. The values are nfigured".
	Version: WPS specified	version.
	AP Setup Locked: Indica	ate if AP has entered a setup locked state
	UUID-E: The universa generated by the Enrollee	lly unique identifier (UUID) element . There is a value. It is 16 bytes.
	RF Bands: Indicate al dual-band AP must pro "5GHz".	l RF bands available on the AP. A vide it. The values are "2.4GHz" and
	OK: Click this button to	exit the information screen.

CXX	
	General WPS CCX
	COM >> FALSE
	Cnie >> FaLSE
	Otip >> F#LSE
	OK
	CCX information contains CCKM, Cmic and Ckip information.
	<b>OK</b> : Click this button to exit the information screen.

## Advanced

This Advanced page provides advanced and detailed settings for your wireless network.

P <b>rofi</b> le	444 Network	Advanced	Statistics	www	<b>Ø</b> WPS		0
Vireless made >>	802,118	/G/N mtx	•	Enable OCX (Cisco	Compatible eXtensions;		
				Turn on CCKW			
				Eneble Redia M	pasurements		
Enable TX Bu	irst			Non-Servi	ng Channel We as urements limit	2.50 ms (0-2000)	
Enable TOP V	Vindow Size						
Fast Roaming	g at _70 dBm						
Show Auther	tication Status I	Dialog					
		haina Cada					
Selec	t Your Countrau	SCRIDE LIDE					
Selec	t Your Country I	CEION CODE	-				
Selec 1 B/G ⇒	0: CH1-11	egion code	•				
Selec 1 B/G >> Apply	0: CH1-11	Window on 0	×				
Selec 1 B/G >> Apply Statu Extra Infi	5 >> 802.11g-AP	-Wireless < > 00	► 0-50-50-08-68-02		Link Quality Con - Course	>> 100%	
Solec 1 B/G >> Apply Statu Extra Info Channe	0: CH1-11 0: CH1-11 0 >> 802.11g-AP 0 >> Link is Up [ 1 >> 2 >>> 2/(7	-Wireless <> 00 [xPower:1008] MH2	► -E0-90-08-68-02		Link Quality Signal Streng U Satia Streng U	>> 100% h 1 >> 51% h 2 >> 51%	
Solec 1 B/G >> Apply Statu Extro Info Chaine Authentication	0: CH1-11 0: CH1-11	-Wireless <> 00 [xPower:1003] MH2	► 0-60-90-00-00-02		Link Quality Signal String Signal String Signal Stringt Signal Stringt	>> 100% h 1 ≥> 51% h 2 >> 51% h 2 >> 51%	
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Solec 1 B/G >> Apply Statu Extra Info Chaine Authentication Encryption Network Type IP Address	0: CH1-11 0: CH1	-Wireless <> 00 [xPower:100%] MH2 LITE	► D-ED-90-08-08-02		Link Quality Signal Streng to Signal Streng to Roise Streng Noise Streng Fransmit Link Speed >> 54.0 Mbps	>> 100% h 1 >> 51% h 2 >> 51% h 3 >> 70% th >> 20%	
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Select 1 B/G >> Apply Statu Extra Info Chaine Authentication Encryption Network Type IP Address Sub Wask Default Gateway	the second	-Wireless <> 00 [xPower:100%] MH2 LITE [2] 5.0	►£0-90-00-00-02		Link Quality Signal Strengt Signal Strengt Signal Strengt Noise Strengt Noise Strengt Link Speed >> 54.0 Wbps Throughput >> 0.000 Kbps	▶> 1000% h 1 >> 51% h 2 >> 51% h 2 >> 50% th ≫ 26% Max D,160 Kops	
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Solec 1 B/G >> Xophy Statu Extra Info Channe Authentication Encryption Network Type IP Address Sub Wast Default Gateway BW >> n/a	<ul> <li>t Your Country I</li> <li>0: CH1-11</li> <li>1: Supplementation</li> <li>1: Supplementation</li></ul>	-Wireless> 00 [xPower:100%] MH2 13 5.0 SNP0	>> n/a		Link Quality Signal Streng ti Signal Streng ti Signal Streng ti Noise Streng Noise	** 100% h 1 ** 51% h 2 ** 51% h 2 ** 20% th ** 26% Max D. 160 Kops Max	

Advanced Tab					
Wireless mode	Select wireless mode. There are 802.11b/g/n mixed, 802.11b only and 802.11b/g mixed modes are supported. Default mode is 802.11b/g/n mixed.				
Enable Tx Burst	Check to enable the burst mode.				
Enable TCP Window Size	Check to increase the transmission quality.				
Fast Roaming at	Check to set the roaming interval, fast to roaming, setup by transmits power.				
Show	When you connect AP with authentication, choose				

Authentication Status Dialog	whether show "Authentication Status Dialog" or not. Authentication Status Dialog displays the process about 802.1x authentications.					
Select Your Country Region Code	Select your country region code from the pull-down menu.					
Enable CCX (Cisco Compatible extensions)	<ul> <li>Check to enable the CCX function.</li> <li>Turn on CCKM</li> <li>Enable Radio Measurements: Check to enable the Radio measurement function.</li> <li>Non-Serving Measurements limit: User can set channel measurement every 0~2000 milliseconds. Default is set to 250 milliseconds.</li> </ul>					
Apply	Click to apply above settings.					

## Statistics

The Statistics screen displays the statistics on your current network settings.

Profile Network   Network Advanced   Statistics   Frames Transmitted Successfully Frames Retransmitted Successfully Frames Fail To Receive ACK After All Retries RTS Frames Successfully Peceive CTS RTS Frames Fail To Receive CTS Rts Frames Fail To Receive CTS Reset Counter Status > 802.11geAP - Wireless ->>00-ED-50-88-68-02 Extra Infa >> Link is Up [[XPower:1808] Channel >> 2 <>> 2412 MHz Authentication >> Uhknown	<ul> <li>450</li> <li>39</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> </ul>
Transmit       Receive         Frames Transmitted Successfully         Frames Ratransmitted Successfully         Frames Ratransmitted Successfully         Frames Ratransmitted Successfully         Frames Fail To Receive ACK After All Ratries         RTS Frames Successfully Receive CTS         RTS Frames Fail To Receive CTS         Reset Counter         Status >> 002.11g-AP -Wireless ->> 00-E0-50-08-60-02         Estre Infe >> Link is Up [TxPower:1003]         Channel >> 2 <>> 2412 MHz         Authentication >> Unknown	- 450 - 39 - 0 - 0
Frames Transmitted Successfully Frames Ratiransmitted Successfully Frames Fail To Receive ACK After All Ratries RTS Frames Successfully Receive CTS RTS Frames Fail To Receive CTS RTS Frames Fail To Receive CTS Reset Counter Status >> 802.11g-AP -Wireless =>> 00-E0-58-88-80-02 Estre Info >> Link is Up [TxPower:1008] Channel >> 2 <=> 2412 MHz Authentication >> Unknown	- 450 - 39 - 0 - 0
Frames Retransmitted Successfully Frames Fail To Receive ACK After All Retries RTS Frames Successfully Receive CTS RTS Frames Fail To Receive CTS Reset Counter Status >> 002.11g-AP -Wireless >>> 00-E0-98-88-80-02 Extre Info >> Link is Up [TxPower:1008] Channel >> Z <>>> 2412 MHz Authentication >> Unknown	= 39 - 0 - 0 - 0
Frames Fail To Receive ACK After All Retries         RTS Frames Successfully Receive CTS         RTS Frames Fail To Receive CTS         Reset Counter         Status >> 002.11g-AP -Wireless >>> 00-E0-50-00-60-00         Extre Info >> Link is Up [TxPower:1008]         Channel >> Z <>> 2412 MHz         Authentication >> Unknown	- 0 - 0
RTS Frames Successfully Receive CTS RTS Frames Fail To Receive CTS Reset Counter Status >> 002.11g-XP -Wireless >>> 00-E0-98-88-88-82 Estre Info >> Link is Up [TxPower:1808] Channel >> 2 <-> 2412 MHz Authentication >> Unknown	- 0 - 0
RTS Frames Fail To Receive CTS Reset Counter Status >> 802.11g-AP -Wireless =>> 00-E0-90-88-88-02 Extra Infa >> Link is Up [TxPower:1008] Channel >> 2 <-> 2412 MHz Authentication >> Unknown	- p
Reset Counter Status >> 002.11g-AP -Wireless =>> 00-E0-50-08-08-02 Extra Info >> Link is Up [TxPower:100%] Channel >> Z <>> 2412 MHz Authentication >> Unknows	
Extre Info >> Link is Up [TxPower:1008] Channel >> Z <> 2412 MHz Authentication >> Unknown	contractionality or atoms
Channel >> 2 <> 2412 MHz Authentication >> Unknown	gth 1 ++ 49%
Authentication >> Unknown	12 Ching: 2 >> 55%
	Renal Stringth 1 Ar 784
Encryption >> None	Noise Strength >> 26%
Network Type >> Infrastructure	Transmit
IP Address >> 192,168,1.33	Link Speed >+ 54.0 Mbps
Sup Mask >> 255.255.0 Default Gateway >>	Throughput >> 0.000 Kbps 0.160
HT	Darotue
Billion pla	Link Speed >> 1.0 Wops
Gi>>n/a WGS>>n/a SNR1>>n/a	Throughput >+ 9.920 Ktps

Transmit				
Frames Transmitted Successfully	Shows information of frames successfully sent.			
Frames Retransmitted Successfully	Shows information of frames successfully sent with one or more reties.			
Frames Fail To Receive ACK After All Retries	Shows information of frames failed transmit after hitting retry limit.			
RTS Frames Successfully Receive CTS	Shows information of successfully receive CTS after sending RTS frame			

RTS Frames Fail To Receive CTS	Shows information of failed to receive CTS after sending RTS.
Reset Counter	Click this button to reset counters to zero.

😽 RaUl								X
Profile Ne	للله { twork Adv	anced	) Statistics	ACC NYMM	<b>Ø</b> WPS			R R
Transmit	Rece	ive						
Frames Pacety	ed Successfully						16	
Frames Receiv	ed With CRC Error						758	
Frames Droppa	Frames Drooped Due To Out-of-Resource						0	
Duplicate Fran	Duplicate Frames Received						0	
Rexet Counter								
Status >>	802.11g-AP -Wirds	ess ≪~⊁00	-E0-58-68-68-02			Link Quality >>	100%	
Extra Info >> Link is Up (TxPower:100%)					Signal Strength 1	>> 55%		
Channel >>	Channel >> 2 <> 2417 MHz					Signal Strength Z	>> 55%	
Authentication >>	Authentication >> Uhknown					Signal Strength 3	×× 76%	
Encryption >>	Infractiniciture					Noise Strength	>> 26%	
IP Address as	Network Type >> Infrastructure				Transmit		Wax	
Sub Wesk >>	IP Address >> 192.108.1.03 Sub Wetk >> 255.255.255.0				Throughout	>> 54.0 MDps		
Default Gateway >>	Default Gateway >>				in rodgi pac	s clobbilitips	0.160 Marc	
	HT				Receive		ALL N	
BW ≥> n/a		SNP0 -	⊳ n/a		Link Speed	>> 1.0 Mbps	Max	
Gl ≫ n/a	omv⇒snua snanos nua Gl>⊧n/a WCS>>n/a SNR1>>n/a				Throughput	>> 9.424 Kbps	9.920 Kaps	

Receive Statistics	
Frames Received Successfully	Shows information of frames Received Successfully.
Frames Received With CRC Error	Shows information of frames received with

	CRC error.
Frames Dropped Due To Out-of-Resource	Shows information of frames dropped due to resource issue.
Duplicate Frames Received	Shows information of duplicate received frames.
Reset Counter	Click this button to reset counters to zero.

## WMM / QoS

The WMM page shows the Wi-Fi Multi-Media power save function and Direct Link Setup that ensure your wireless network quality.

100000						
<u>P</u>	خصك	S.	M	Qos	Ø	2
Profile	Network	Advanced	Statistics	NAMAN	WPS	
WMM Setup	Status					
V	WMM >> Enabled	Ромен	Save >> Disabled		D	irect Link >> Disabled
<b>2</b> W	IWM Enable					
(	WWW - Power Sa	ve Enable				
	AC,BX		VC_BE	□ AC_M	☐ 40_100	
(	Direct Link Setu;	p Enable				
	WWC Address			Timeout V	aua >> 60 sec	Apply
						1949 W
						Tear Doxn
2	tetus >> 802.11g-AP	-Wireless <> 00	0-60-90-00-00-02	1	Link Quality	>> 100%
Extra	ə İndo≫ Link isUp ∏	[xPower:100%]			Signel Strength	1 >> 49%
Ch	annel >> 2 <> 2417	WHz			Signel St. <mark>rength</mark>	2 >> 44%
Authentic	ation >> Unknown			1		15%
Encry	ption ≫ Nane Trans a laSantant			1	Noise Strengt	h >> 26%
Encry Network	ption >> None Type >> Infrastructs descripts 102,148,1,2	ura		I	Noise Strengt ransmit	h >> 26%
Encry Network IP Ad	ption >> None Type >> Infrastructs dress >> 192.168.1.3 Work >> 255 255 255	ure B		T	Norse Strengt ranomit Link Speed >> 54.0 Mbps	h >> 26%
Encry Natwork IP Ad Sub Default Gat	ption >> None Type >> Infrastruct dress >> 192, 168, 1.3 Mask >> 255, 255, 259 eway >>	ura 13 5.0		1	Noise Strengt raromit Link Speed >> 54.0 Mbps Throughput >> 0.000 Kbps	n >> 25% Max 0,160
Encry Network IP 4d Sub Default Gat	ption >> None Type >> Infrastruct dress >> 192,168,1.3 Mask >> 255,255,259 eway >> HT	ure 13 5.0		1	Noise Strengt reromit Link Speed >> 54,0 Mbps Throughput >> 0,000 Kbps	Max 0.160 Hbps
Encry Network IP Ad Sub Default Gat	ption >> None Type >> Infrastruct dress >> 192,168,1.3 Wask >> 255,255,259 eway >> HT	ure 13 5.0 		I	Noise Strengt raromit Link Speed >> 54,0 Mbps Throughput >> 0,000 Kbps eccive Link Speed >> 1,0 Mbps	h >> 26% Mex 0.160 Rbps Mex
Encry Network IP Ad Sub Default Gat BW >> n/r Gl >> n/r	ption >> None Type >> Infrastructure dress >> 192.168.1.3 Mask >> 255.255.259 except >> HT a a NCS >> n.	ura 33 5.0 	>>n/a	1	Note Strengt raromit Link Speed >> 54.0 Mbps Throughput >> 0.000 Kbps ecceive Link Speed >> 1.0 Mbps Throughput >> 9.920 Kbps	Mex 0.160 Hbps Mex 0.00
Encry Network IP Ad Sub Default Gat BW >> n/r Gl >> n/r	ption >> None Type >> Infrastructure dress >> 192.168.1.3 Mask >> 255.255.251 ewey >> HT a a NCS >> n.	una 13 5.0 	>> n/a >> n/a	1	Noise Strengt faromit Link Speed >> 54,0 Mbps Throughput >> 0,000 Kbps eccive Link Speed >> 1,0 Mbps Throughput >> 9,920 Kbps	h >> 26% Max 0,160 Hbps Max 9,920
Encry Network IP Ad Sub Default Gat BM/ >> n/r GI >> n/r	ption >> None Type >> Infrastructu dress >> 192.168.1.3 Mask >> 255.255.251 evvey >> HT a a NICS >> n.	ura 13 5.0 	>> n/a >> n/a	,	Noise Strengt faromit Link Speed >> 54.0 Mbps Throughput >> 0.000 Kbps eccive Link Speed >> 1.0 Mbps Throughput >> 9.920 Kbps	Max 0.160 Naps Mex 9.920 Naps

WMM Enable	Check the box to enable Wi-Fi Multi-Media function.
WMM- Power Save Enable	Select which ACs you want to enable.
Direct Link Setup Enable	Check the box to enable Direct Link Setup.
MAC Address	<ul> <li>The setting of DLS indicates as follow :</li> <li>Fill in the blanks of Direct Link with MAC Address of STA, and the STA must conform to two conditions:</li> <li>Connecting with the same AP that supports DLS feature</li> </ul>
	<ul> <li>DSL enabled.</li> </ul>
Timeout Value	Timeout Value represents that it disconnect automatically after few seconds. The value is integer that must be between 0~65535. It represents that it always connects if the value is zero. Default value of Timeout Value is 60 seconds.
Apply	Click this button to apply the settings.
Tear Down	Select a direct link STA, then click "Tear Down" button to disconnect the STA.

## WPS

The primary goal of Wi-Fi Protected Setup (Wi-Fi Simple Configuration) is to simplify the security setup and management of Wi-Fi networks. The STA as an Enrollee or external Registrar supports the configuration setup using PIN (Personal Identification Number) configuration method or PBC (Push Button Configuration) method through an internal or external Registrar.

## Radio On/Off



Click this button to show the information of the wireless card including, RaConfig Version/ Date, Driver Version/ Date, EEPROM Version, Firmware Version and Phy\_Address.

Profile	Network	Advanced	) Statistics	<b>N</b> WWA	<b>Ø</b> WPS			G
	J	c) Copyright 2007	, Palink Technology,	, Inc. All rights n	served.			
		RaConfig Version :	× 2.0.2.0		Data >> 05-15-	2007		
	Driver Version >> 1.0.3.0			Date >> 05-07-2007				
		EEPROM Version :	ee 1.1					
	ī	irmware Version :	>> D,7					
		Phy_Address :	> 00-12-0E-00-00-	12				
			ww	W.RALINKTECH.C	ow			
			ww	W.RALINKTECH.C	ow			
			ww	W.RALINKTECH.C	CM .			
Statu	s >> 802.11g-4	P-Windess ->0	ww1	W.RALINKTECH.C	ow	ini conto-	- 1000	
Statu Extra Inf	a >> 802.11g-4 a >> Link is Up	P-Windess ==>0 [TxPower:1003]	WW1	W,RALINKTECH,C	CM	ini sonto-	• 1001 1 ** 45%	
Statu Extre Inf Chann	a → 802.11g+A a → Link is Up a → Z → Z41	P -Windess>0 [TxPower:1803] 2 MHz	WW1 0-E0-50-88-68-02	W, PALINKTECH, C	сж	inii anity ength titi	• 100N 1 ••• 45% 2 ••• 50%	
Statu Extre Inf Chann Autrenticato	a >> 802.11g-X a >> Link is Up al >> Z <-> 241 n >> Unknown	P -Windess>0 [TxPower:1003] 7 MHz	WW1 0-E0-98-88-68-02	W.PALINKTECH.C	ож	i ni sinily engti engti tu tingti	1 *** 45% 2 ** 50%	
Statu Extra Inf Chann Authenticatio Encryptio	a >> 802.11g-A a >> Link is Up al >> Z <-> 241 n >> Unknawn n >> Name	P -Windess>0 [TxPower:1008] 2 MHz	WW1	W.RALINKTECH.C	ож	init control - ength ength total frength Noise Strength	- 1004 1 ++ 45% 2 ++ 50% 	
Statu Extre Inf Chann Authenticatio Encryptio Network Typ	a >> 802.11g-A a >> Link is Up al >> Z <-> 241 n >> Unknawn n >> None c >> Infrastruc	P -Wireless ==>0 [TxPower:1008] 2 MHz ture	WW1	W.RALINKTECH.C	CW Transmit	ength ength (thi server brength Noise Strength	2 100N 1 ++ 45% 2 →> 50% 5 + - 26%	
Statu Extra Inf Chann Authenticatio Encryptio Network Typ IP Addres	s >> 802.11g-A c >> Link is Up s >> Link is Up n >> Unknawn n >> None c >> Infrastruc s >> 192.168.1	P -Windess>0 [TxPowers1803] 2 MHz ture .33	WW1 0-E0-50-88-68-02	W, PALINKTECH, C	CW Transmit Link Speed >>	Crist Could y ength (th : Crist Changes Rootse Strength 544.0 WDps	• 1001 1 ** 45% 2 ** 50% ** 26%	
Statu Extra Inf Chann Authenticatio Encryptio Network Typ IP Addres Sub Mas Default Gatewa	a >> 802.11g-A a >> Link is Up a) >> Z <-> 241 n >> Unknawn n >> Name c >> Infrastruc s >> 192.168.1 k >> 255.255.2 y >>	P -Wineless>0 [TxPower:1008] 2 MHz ture .33 55.0	WW1	W.RALINKTECH.C	CW Transmit Link Speed >> Throughput >>	Vinit Society - ength Gene (ength Gene (ength Gene (ength Rollse Strength S4.0 Wbps 0.030 Kbps	• 1004 1 ++ 45% 2 ++ 50% 5 ++ 26% ** 26%	
Statu Extre Inf Chann Authenticatio Encryptio Network Typ IP Addres Sub Nes Sub Nes	s >> 802.11g-A a >> Link is Up a >> Link is Up a >> 2 <> 241 a >> Unknawn a >> Unknawn a >> Infrastruc s >> 192.168.1 k >> 255.255.2 y >>	P -Windess>0 [TxPowers1008] 2 MHz ture .33 55.0	WW1	W.RALINKTECH.C	CW Transmit Link Speed >> Throughput >>	Link couldy - ength (th : tspol/ticet Noise Strength 54.0 Wbps 0.000 Kbps	• 1000 1 ++ 45% 2 -> 50% 0 +	
Statu Extre Inf Channi Authenticatio Encryptio Network Typ IP Addres Sub Wes Sub Wes	a >> 802.11g-A a >> Link is Up a >> Z <-> 241 a >> Unknawn a >> Nane c >> Infrastruc s >> 192.168.1 k >> 255.255.2 y >>	P -Windexs s-> 20 [TxPowers1803] 2 MHz ture .33 55.0	WW1	W.PALINKTECH.C	CW Transmit Link Speed >> Throughput >> Repetue	I mit scoulds ength cthr: totss Strength 54.0 Wbps 0.030 Kbps	<ul> <li>1001</li> <li>1 &gt;&gt; 45%</li> <li>2 &gt;&gt; 50%</li> <li>&gt;&gt; 26%</li> <li>Max</li> <li>0.168</li> <li>Naps</li> </ul>	

# UNINSTALLATION

In case you need to uninstall the utility and driver, please refer to below steps. (As you uninstall the utility, the driver will be uninstalled as well.)

## 1. Go to Start $\rightarrow$ Programs $\rightarrow$ Ralink Wireless $\rightarrow$ Uninstall.



2.	Select Remove al	button and	click Next to	start uninstalling.
----	------------------	------------	---------------	---------------------

Intelligent wireless card - I	InstallShield Wizard	×			
Please select one way to continue install.					
	There have existed an older version. Which way do you like to do?				
InstallShield	< Back Next> Cance	i I			

 Click Yes to complete remove the selected application and all of its features.



4. Select "Yes, I want to restart my computer now" and then click Finish to complete the uninstallation.

Intelligent wireless card - In	istallShield Wizard
	Uninstall Complete InstallShield Wizard has finished uninstalling Intelligent wireless card.
	<ul> <li>Yeo, I want to restart my computer now.</li> <li>N o, I will restart my computer later.</li> </ul>
	Hemove any disks from their crives, and then blok Hinish to complete selup.
	$\frown$
InstallShield	< Back Finish Cancel

## **Regulatory statement**

## **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.

### **IMPORTANT NOTE:**

### FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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

### This device is intended only for OEM integrators under the following conditions:

- 1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2) The transmitter module may not be co-located with any other transmitter or antenna,

3) For all products market in US, OEM has to limit the operation channels in CH1 to CH11 for 2.4G band by supplied firmware programming tool. OEM shall not supply any tool or info to the end-user regarding to Regulatory Domain change.

As long as 3 conditions above are met, further transmitter test will not be required. However, the 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 <u>can not be met</u> (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID <u>can not</u> 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 FCC 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 FCC ID: EJE-WL0025".

Manual Information To the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or

remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

This device is restricted to indoor use when operated in the 5.15 to 5.25 GHz frequency range.

### **Industry Canada Statement**

This device complies with Industry Canada licence-exempt RSS standard(s). 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. This device is restricted to indoor use when operated in the 5.15 to 5.25 GHz frequency range.

This device has been designed to operate with an antenna having a maximum gain of 4.67dBi for 2.4GHz and 5.1dBi for 5GHz.

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 EIRP is not more than required for successful communication.

#### **IMPORTANT NOTE:**

### IC Radiation Exposure Statement:

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

#### This device is intended only for OEM integrators

#### under the following conditions:

- 1. The antenna must be installed such that 20 cm is maintained between the antenna and users, and
- 2. The transmitter module may not be co-located with any other transmitter or antenna,
- 3. For all products market in CANADA, OEM has to limit the operation channels in CH1 to CH11 for 2.4GHz band by supplied firmware programming tool. OEM shall not supply any tool or info to the end-user regarding to Regulatory Domain change.

As long as 3 conditions above are met, further transmitter test will not be required. However, the 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 ID 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

The final end product must be labeled in a visible area with the following: "Contains IC : 337J-WL0025".

## Manual Information That Must be Included

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

## NCC Statement

## 以下警語適用台灣地區

- 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。
- 3. 5.25-5.35GHz 頻帶內操作之無線資訊傳輸設備,限於室內使用。
- 本產品內含射頻模組 ₩CCAF11LP0520T2