WUB1900 IEEE 802.11b/g/n USB Adapter (Bandwidth 20/40MHz)

User's Manual

1. Introduction

The **WUB1900** USB Dongle Adapter (hereafter called USB Dongle adapter), compliant with IEEE 802.11b/g, is a high-efficiency wireless adapter for wireless networking at home, in office, or in public places. This USB Dongle adapter connects directly to any USB-ready desktop/notebook computers, so that you can share files, printers, and high-speed access to the Internet over your existing wireless network easily, without disassembling your computer.

The WUB1900 USB Dongle Adapter has a data rate of up to 160Mbps, and can auto-negotiate to 54, 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2, 1Mbps to be compatible with any IEEE 802.11b/g device.

The WUB1900 USB Dongle Adapter is compatible with Windows 98SE/ME/2000/XP and can be used in either **Ad-hoc mode** (computer-to-computer, without a wireless router) or **Infrastructure mode** (computer-to-wireless router, a wireless router is required).

1.1 Features

- Connects at a 160Mbps via USB 2.0, up to 13 times faster than a WiFi-b
- Compact size for greater flexibility
- Also compatible with USB 1.1 desktop and notebook computers
- Plug-and-Play Compatible with windows XP (32/64bit), Vista
- Security: WEP 64/128 bits TKIP/802.11i compliant AES –CCMP encryptionWPA-PSK,WPA2-PSK,802.1x,EAP-TLS,EAP-TTLS,PEAP-TL,PEAP(EAP -GTC),PEAP(EAP-MSCHAPv2),Jumpstar2.0
- Support WPA/WPA2-Personal, WPA/WPA2-Enterprise
- QoS :WMM
- Support WPS
- Support Hardware Push Button for WPS
- Support 802.11 d , 802.11h
- Support DFS1.0 and 2.0
- Support WHQL
- RTS & Fragment Threshold support
- WOL(Wake On WLan) Support

Advance Feature

- Roaming
- Japan Mid Band
- WoW and Dual Core support
- 802.11 adhoc
- ACU (for XP only)

1.2 Package Contents

Before you begin the installation, please check the items of your package. The package should include the following items:

- · One WUB1900
- · One Quick Installation Guide
- · One Driver & Utility CD (with User's Manual)
- · USB Cable

If any of the above items is missing, contact your supplier as soon as possible.

2. Installation Procedures

This chapter describes the instructions that guide you through the proper installation of your WUB1900 for the Windows 98SE/ME/2000 /XP/VISTA operating systems.

The complete installation of the WUB1900 consists of the following steps

- STEP 1 : Insert the provided Driver and Utility CD into your CD drive.
- STEP 2 : Click **Install Driver** from the Setup menu.
- STEP 3 : When the welcome screen appears, click **Next**.
- STEP 4 : Click **Next** to accept the default destination folder for the software or click **Browse** to manually select a different destination folder.
- STEP 5 : For Windows XP, click **Continue Anyway** at the Windows Logo Compatibility screen.
- STEP 6 : Click **Finish** to complete the installation.
- STEP 7 : Remove the Driver & Utility CD from your CD drive and then restart your computer.

Before Installation

In addition to the items shipped with the client adapter, you will also need the following in order to install the adapter:

Windows XP/Vista CD-ROM. (original Windows installation CD-ROM or diskettes)

Driver Installation for Windows

This section describes the installation procedures of the WUB1900 driver for the Windows XP/Vista operating systems.

Note: Before you start the installation, you are advised to keep the Windows CD-ROM in case you might need certain system files.

2.1 Install Driver & Utility Software

Note1: Before installing the utility software, **DO NOT** insert the USB adapter into your computer. If the adapter is inserted already, Windows will detect the adapter and request for a driver. Click **Cancel** to quit the wizard and remove the adapter from your computer.

Note2: If you have installed the USB adapter driver & utility already, please uninstall the old version first.

Step 1 Insert the provided Driver and Utility CD into your CD drive.



Step 2 Click Install Driver & Utility from the Setup menu.

Note: If the Setup menu does not appear automatically, go to **Start**, **Run**, type **D:\autorun.exe** (where **D** is the letter of your CD drive) and click **OK**.

2.2 Install Utility Software

Step 1 When the welcome screen appears, select the language you want ,then click Next.

Step 2 Select "I accept the terms of the license agreement", then click Next

PCI Communications, Inc.	Software Lic	ense Agreement	1
PLEASE READ THIS SOFTWARE BEFORE USING THE PCI SOFTW/ AGREEING TO BE BOUND BY TH	LICENSE AGREEMENT (" ARE. BY USING THE PCI E TERMS OF THIS LICENS	LICENSE'') CAREFUL SOFTWARE, YOU AF SE.	LY RE
IF YOU DO NOT AGREE TO THE 1 SOFTWARE. IF YOU DO NOT AG RETURN THE PCI SOFTWARE TO REFUND. IF THE PCI SOFTWARE "DISAGREE/DECLINE". FOR PCI DISAGREE/DECLINE". FOR PCI	TERMS OF THIS LICENSE REE TO THE TERMS OF 1 O THE PLACE WHERE YO WAS ACCESSED ELECT SOFTWARE INCLUDED V	, DO NOT USE THE HE LICENSE, YOU M U OBTAINED IT FOR RONICALLY, CLICK /ITH YOUR PURCHA	IAY A
UF HARDWARE, YUU MUST RET	URN THE ENTIRE HARD	WARE/SUFTWARE	8
I accept the terms of the license	agreement	F	rint

Step 3 Please insert USB dongle while this screen appears, then press "OK"



Step 4 Choose the Destination Folder, then press Next

Choose Destination Location	
Select the folder where the install	ation program will install the files.
The installation program will instal	the client utilities in the following location:
Destination Folder	
Destination Folder C:\Program Files\PCI	Browse
Destination Folder C:\Program Files\PCI	Browse

Step 5 Click **Next** to accept the default destination folder for the software or click **Browse** to manually select a different destination folder.

Choose this option to install the driver and client utilities. This is the recommended option.

Step 6 Click Next, then choose PCI Client Utility (PCU), then Press Next

CI Client Installation Program	n in the second s	>
PCI Client Installation Program		
IMPORTANT: Please Read!		
On Windows XP, you can configu Client Utility (PCU) or a third-party s the functionality available in the PC that a patch from Microsoft might b On the next screen, select whethe your client adapter. NOTE: If you select a third-party to activate those features, you must i	re your PCI Wireless LAN Client Adapter through the PCI supplicant. Because third-party tools may not provide all of CU, PCI recommends that you use the PCU. (Please note be required to use the Microsoft tool with WPA security.) ar you want to use the PCU or a third-party tool to configure yol, some of the PCU features will not be available. To install the PCU.	
tallShield	< Back Next > Cancel	

PCI Client Installation Program	
Choose Configuration Tool	No.
Which tool will you use to configure your client adapter?	
PCI Client Utility and Supplicant.	
O Third-Party Supplicant	
InstallChined	
K Back	ext > Cancel

Step 7 You can choose **Single Sign On** feature or not while you install the utility ,then press **Next**

PCI Client Installation Program	×
Single Sign On feature set install option.	
Please select an option "Install Single Sign On feature set" or "Do not install Single Sign On feature set".	
O Install Single Sign On feature set.	
⊙ Do not Install Single Sign On feature set.	
Single Sign On feature set (SSO) is a mechanism whereby a single action of user authentication and authorization can permit a user to access all computers and systems where he has access permission, without the need to enter multiple passwords.	1
Restriction of Use SSD:	
* Windows Graphical Login Screen is disabled.	
* Fast User Switch is disabled.	
* Require the user to have a password.	
InstallShield	- 77
Cancel	

Step 8 Click **Continue Anyway** at the Windows Logo Compatibility screen. Then finish utility installation.

Software Installation			
<u>.</u>	The software you are installing has not passed Windows Logo testing to verify its compatibility with Windows XP. (<u>Tell me why</u> <u>this testing is important.</u>) Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the software vendor for software that has passed Windows Logo testing.		
	Continue Anyway STOP Installation		

PCI Client Installation Prog	gram
	InstallShield Wizard Complete The installation program has successfully performed the selected operations. Click Finish to exit the Wizard.
	< Back Finish Cancel

2.3 Install WPS

Step 1 Choose setup language.

Jumpstart Installation Program - InstallShield Wizard	
Choose Setup Language Select the language for the installation from the choices below.	24
English Japanese	
nstallShield	
< Back Next	Cancel

Step 2 Click Next to start install Jumpstart.

Jumpstart Installation Pro	gram	
	Jumpstart Installation Program	
	This program installs the Jumpstart application .	
	< Back Next > Canc	el

Step 3 Select "I accept the terms of the license agreement" ,then click $\ensuremath{\textit{Next}}$

Jumpstart Installation Program	
License Agreement Please read the following license agreement carefully.	IN
PCI Communications, Inc. Software License Agreement	
PLEASE READ THIS SOFTWARE LICENSE AGREEMENT ("LICENSE") CAREFULLY BEFORE USING THE PCI SOFTWARE. BY USING THE PCI SOFTWARE, YOU ARE AGREEING TO BE BOUND BY THE TERMS OF THIS LICENSE. IF YOU DO NOT AGREE TO THE TERMS OF THIS LICENSE, DO NOT USE THE SOFTWARE. IF YOU DO NOT AGREE TO THE TERMS OF THE LICENSE, YOU MAY RETURN THE PCI SOFTWARE TO THE PLACE WHERE YOU OBTAINED IT FOR A REFUND. IF THE PCI SOFTWARE WAS ACCESSED ELECTRONICALLY, CLICK "DISAGREEF/DECI INE", FOR PCI SOFTWARE INCLUDED WITH YOUR PURCHASE	
OF HARDWARE, YOU MUST RETURN THE ENTIRE HARDWARE/SOFTWARE	×
I accept the terms of the license agreement I do not accept the terms of the license agreement InstallShield	
< Back Next > Car	icel

Step 4 Click **Continue Anyway** at the Windows Logo Compatibility screen. Then finish utility installation.

Software	e Installation
1	The software you are installing has not passed Windows Logo testing to verify its compatibility with Windows XP. (<u>Tell me why</u> this testing is important.) Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the software vendor for software that has passed Windows Logo testing.
	Continue Anyway STOP Installation

Hardware Installation Image: Strain Strain

Step 3 Click Finish.

Jumpstart Installation Pro	gram
	InstallShield Wizard Complete The installation program has successfully performed the selected operatons. Click Finish to exit the Wizard.
	< Back Finish Cancel

2.3 Install Driver for Win XP / Vista

 $\label{eq:step1} Step 1 \ \mbox{Choose install the software automatically (Recommended) , then press Next}$

Hardware Update Wizard	
	Welcome to the Hardware Update Wizard This wizard helps you install software for: PCI GW-US300GXS
	 If your hardware came with an installation CD or floppy disk, insert it now. What do you want the wizard to do? Install the software automatically (Recommended) Install from a list or specific location (Advanced)
	< Back Next > Cancel
Hardware Update Wizard Please wait while the wize	ard searches



Step 2 Click **Continue Anyway** at the Windows Logo Compatibility screen. Then finish utility installation.



Step 3 Click Finish. Restart the computer if you are prompted to do so.

Hardware Update Wizard	
	Completing the Hardware Update Wizard The wizard has finished installing the software for: PCI GW-US300GXS
	Click Finish to close the wizard.
	K Back Finish Cancel

3. Configuring USB Adapter as a Wireless Client

The USB adapter can be set to either **Station** or **Access Point** Mode from the **Mode** drop-down menu. **Station** mode is the default selection and should be selected if you want to connect to a wireless router/access point or conduct peer-to-peer networking.

To open the utility, go to Start, (All) Programs, Atheros/Atheros Client Utility.

Step 1 In **Profile Management**, Select the **Scan** of your wireless router/access point from the Available Network list and click on the **Activate** button.

n <u>O</u> ptions <u>H</u> elp		
ent Status Profile Manag	ement Diagnostics	
Default		New
		Modify
		Remove
		Activate
Details		
Network Type:	Infrastructure	Import
Security Mode:	Disabled	
Network Name 1 (SSID1): <empty></empty>	Export
Network Name 2 (SSID2): <empty></empty>	Scap
Network Name 3 (SSID3): <empty></empty>	Joan
Auto Select Profiles		Order Profiles

Network Name (S	SID) 🔞 11n	Super XR	Signal Strength	Channel	V
Å 1 ACE	وتتته		11 16 dB	1	2
A ALE		r		10	2.
i Japreadu	2V 62	_		5	2
a Im7			1]] 4 dB	11	2.
1					>

Av	ailable Infrastructi	ire and l	Ad Hoc Net	works		? ×
	Network Name (SSID)	ि 1 स्व स्व <u>अ</u>	1n Super	XB Signal Strength 11 16 dB 11 18 dB 11 47 dB 11 64 dB 11 4 dB	Channel 1 10 3 6 11	W 2. 2. 2. 2.
	<					>
		0	Activate	Refresh	ОК	

Step 2 Verify that the adapter has adequate Signal Strength.

Network Name(SSID): Lists all the available wireless router/access point in your area. You can click on the **Refresh** button to update the list.

11n: Displays the network information if this available wireless router/access point supports 11n.

Super: Displays the network information if this available wireless router/access point support Super mode.

XR: Displays the network information if this available wireless router/access point support XR mode..

Signal Strength: Displays the current link quality.

Wireless Mode: Displays the wireless network information of the wireless router/access point

3.1 Configuring Profile Settings

Click Modify to configure the adapter's General ,Security and Advanced Setting

rent Status Profile Manage	ement Diagnostics	
Se Default		Now
Cerduit		146W
		Modify
		Remove
		Activate
Details		
Network Type:	Infrastructure	Import
Security Mode:	Disabled	
Network Name 1 (SSID1)): <empty></empty>	Export
Network Name 2 (SSID2): <empty></empty>	Scan
Network Name 3 (SSID3): <emply></emply>	Juli Juli Juli Juli Juli Juli Juli Juli
Auto Select Profiles		Order Profiles

Input the adapter's **Profile Name**

Profile Management	? 🛛
General Security Advance	ed land
Profile Settings	
Profile Name:	Default
Client Name:	LANREADY-FE266H
Network Names	
SSID1:	
SSID2:	
SSID3:	
L	OK Cancel

Select Security Options

Set Security Options	[
⊙ WPA/WPA2	WPA/WPA2 EAP Type: LEAP	~
O WPA/WPA2 Passphras	3	
🔘 802.1x	802.1x EAP Type: LEAP	×
O Pre-Shared Key (Static \	VEP)	
 None 		
Configure	Allow Association to Mixed Cells Profile Locked	
	Limit Time for Finding Domain Controller To: 0	Sec.
Group Policy	Delay: 0 sec	

Verify Transmit Power Level and Wireless Mode

Notice : All configurations for 2.4GHz were based on 2.4GHz(802.11bgn) RF chipset .Otherwise it can't work.

2.4 GHz: 100 mW	Power Save Mode:	Off		~
5 GHz: 40 mW	Network Type:	Infrastruct	ture	~
Wireless Mode	Wireless Mode When Starting	g Ad Hoc N	etwork	
🗹 5 GHz 300 Mbps	◯ 5 GHz 54 Mbps			
✓ 5 GHz 54 Mbps ✓ 2.4 GHz 300 Mbps	0 2.4 GHz 11 Mbps			
 ✓ 2.4 GHz 54 Mbps ✓ 2.4 GHz 11 Mbps 	◯ 2.4 GHz 54 Mbps		Channel: Auto	~
	-802.11 Authentication Mode			
	O Auto 💿 O	pen	O Shared	
Roaming: Default	v		Preferred APs	

Transmit Power Level: This setting is for USB adapter power transmitting **2.4GHz:**1,2,3,4,5,6,7,8,9,10,20,32,50,63,100mW **5GHz : No function on this product. Power Save Mode:**

Off: provides the best signal throughput but least power save. **Normal**: provides average power save and throughput. **Maximum**: provides the best power save but least throughput.

Network Type: Choose from **Infrastructure** (for connecting to a wireless router/access point) or **Ad-Hoc** (for computer-to-computer networking, bypassing the wireless router/access point).

Wireless Mode

Include 2.4GHz 300Mbps /2.4GHz 54Mbps /2.4GHz 11Mbps

Wireless Mode When Starting Ad Hoc Network Support 2.4GHz 300Mbps /2.4GHz 11Mbps/2.4GHz 54Mbps

Roaming:

Support Low/Very Low/Normal/High/Very High

Preferred APs

You can assign Preferred APs by MAC address. Maximum up to 4 APs. Click **Apply** to save the changes.

3.2 Configuring Encryption Security

3.2.1 Pre-shared Key(Static WEP)

Select Pre-shared Key(Static WEP) then click configure to do the WEP settings.

et Security Options	WPA/WPA2 EAP Type: LEAP	~
🔘 WPA/WPA2 Passphrase		
○ 802 1x	802.1x EAP Type: LEAP	~
● Pre-Shared Key (Static WEP)		
O None		
Configure	Allow Association to Mixed Cells	
	Limit Time for Finding Domain Controller .	Sec .
Group Policy Del	ay: 0 🔅 sec	

• Hexadecimal (0-9, A-F)	 ASCII Text (all keyboard characters) 	
Encryption Keys	WERK	au Ciza:
Transmit Key	64 1	28 15.
WEP Key 1: 💿		0 0
WEP Key 2:	⊙ (0 0
WEP Key 3: O	⊙ (0 0
WEP Key 4: 🔿	⊙ (0 0
WEP Key 4: O		

Key Entry: Select either Hexadecimal (0-9, A-F) or ASCII (any number or letter).

Transmit Key: Select which of the four Key Value you want to use.

WEP Key Size: Select the appropriate encryption key length.

Note the following rules when entering Key values:

- **64-bit** key length requires **10** Hexadecimal characters (0-9, A-F) or **5** ASCII characters (any number or letter).
- **128-bit** key length requires **24** Hexadecimal characters (0-9, A-F) or **13** ASCII characters (any number or letter).
- **152-bit** key length requires **32** Hexadecimal characters (0-9, A-F) or **16** ASCII characters (any number of letter).

And then click **OK** to save the settings.

Note: The WEP Key settings must be identical to the WEP settings of the wireless router/access point you wish to connect to.

After you have applied the changes, return to the utility's main screen and select the wireless router/access point you wish to connect to.

If you want to use WPA encryption, click on **Change** in the General Connection Setting.

3.2.2 802.1x

Profile Management		? 🗙
General Security Advanced		
- Set Security Options		
◯ WPA/WPA2	WPA/WPA2 EAP Type: LEAP	
🔘 WPA/WPA2 Passphrase		
€ 802.1x	802.1x EAP Type: LEAP 💌	
OPre-Shared Key (Static WEP)		
🚫 None		
Configure	Allow Association to Mixed Cells	
	Limit Time for Finding Domsin Controller : 0	
Group Policy Delay	60 🗢 sec	
-		
	確定	取消

Configure LEAP	? 🛛
Always Resume the Secur	e Session
User Name and Password S	ettings
O Use Temporary User	Name and Password
O Automatically Pr	ompt for User Name and Password
O Manually Promp	for User Name and Password
Use Saved User Nam	e and Password
User Name:	
Password:	
Confirm Password:	
Domain:	
Include Windows Lo	gon Domain with User Name tion Unless User Is Logged In uthentication Timeout Value (in seconds) 30 😭

- 1. After associating with a wireless access point, the client sends an EAP-start message. begins a series of message exchanges to authenticate the client.
- 2. The access point replies with an EAP-request identity message.
- 3. The client sends an EAP-response packet containing the identity to the authentication
- 4. The authentication server uses a specific authentication algorithm to verify the client's this could be through the use of digital certificates or other EAP authentication
- 5. The authentication server will either send an accept or reject message to the access
- 6. The access point sends an EAP-success packet (or reject packet) to the client.

3.2.3 WPA/WPA2 Passphrase

WPA/WPA2 Passphrase offers two encryption methods, TKIP and AES, with dynamic encryption keys. Select TKIP or AES for encryption. Then enter a Pre-shared Key that is 8-63 characters in length. You must enter the same security settings used on your network.

Profile Management		? 🛛
General Security Advanced		
- Set Security Options		- I
O MPA/MPA2	WPA/WPA2 EAP Type: LEAP	
⊙ WPA/WPA2 Passphrase		
0802.1x	802.1x EAP Type: LEAP	-
OPre-Shared Key (Static WEP)		
O None		
Configure	Allow Association to Mixed Cells	
	Limit Time for Finding Domain Controller . 0	
Group Policy Delay:	60 🗢 sec	
		Terèta
	[確定] [取消

Encryption - Select the type of algorithm you want to use, TKIP or AES, from the *Encryption* drop-down menu.

Configure WPA/WPA2 Passphrase	? 🛛
Enter a WPA/WPA2 passphrase (8 to 63 ASCII or 64 h	exadecimal characters)
	OK Cancel

Click the **OK** button to continue or the Cancel button to back to the previous screen.

3.2.4WPA/WPA2

WPA/WPA2 features WPA security used in coordination with a RADIUS server. (This should only be used when a RADIUS server is connected to the Router.) WPA/WPA2 offers several authentication methods,

EAP-TLS/EAP-TTLS/PEAP/LEAP/EAP-FAST/EAP-SIM, as well as two encryption methods, TKIP and AES, with dynamic encryption keys. You must

enter the same security settings used on your network. Authentication - Select the

authentication method your network is using EAP-TLS or PEAP.EAP-TTLS

) WPA/WPA2	WPA/WPA2 EAP Type:	LEAP	*
) WPA/WPA2 Passphrase	000 4 TID T	10070	
/802.1x	8U2.1x EAP Type:	LEAP	*
Pre-Shared Key (Static WEP)			
) None			
	Allow Association to Mixed C	ells	
Configure	Profile Locked		
	📃 Limit Time for Finding Doma	in Controller : 🕕	Sec .
Group Policy Delay	r: 60 🗢 sec		

EAP-TTLS

If you selected **EAP-TTLS**, enter the login name of your wireless network in the *Login Name* field. Enter the name of the authentication server in the *Server Name* field (this is optional). From the *Certificate* drop-down menu, select the certificate you have installed to authenticate on your wireless network. Select the type of encryption with TKIP or AES

Click the **Apply** button to continue or the Back button to return to the previous screen. **PEAP**

If you selected PEAP, enter the login name of your wireless network in the *Login Name* field. Enter the password of your wireless network in the *Password* field. Enter the name of the authentication server in the *Server Name* field (this is optional). From the *Certificate* drop-down menu, select the certificate you have installed to authenticate you on your wireless network; if you want to use any certificate, keep the default setting, Trust Any. Then select the authentication method used inside the PEAP tunnel. Select the type of encryption with TKIP or AES

Click the **Apply** button to continue or the Back button to return to the previous screen

LEAP

Light Extensible Authentication Protocol (LEAP) is a proprietary 802.1x EAP method developed by Cisco for use on wireless networks that use Cisco 802.11 wireless devices. It features dynamic per user per session WEP keys.

3.3 WPS JUMPSTART RUN

Select Join a wireless network, then push **Next** button.

🔀 JumpStart for Wirele	55	? 🛛
Welcome to JumpS JumpStart is compatible with This application will guide ye	i tart n Wi-Fi Protected Setup [™] ou through configuring your wireless network.	
UMPSTART CORVERENCESS	What do you want to do? Join a wireless network Configure a wireless network Add another device to my wireless network	
	< Back Next > Cancel	Help

Select **Push the button on my access**, at same time you need to push that button. Then push **Next** button.



The device will search access point and connect it.

🔀 JumpStart for Wireless	? 🔀
Configuring the wireless network.	
Searching for a network	
< Back Next > Cancel	Help

📂 PCI Client Utility - Current I	Profile: Default	? 🛛
Action Options Help		
Current Status Profile Management	Diagnostics	
⊜ PC∔		
Profile Name:	Default	ATHEROS
Link Status:	Associated	Network Type: Infrastructure
Wireless Mode:	2.4 GHz 54 Mbps	Control Channel: 3
		Extension Channel:
Server Based Authentication:	None	Data Encryption: None
IP Address:	192.168.0.106	
Signal Strength:	********	Excellent
		Advanced
19 <u>-</u>		

4. Appendix

4.1 Specifications

	[WUB1900] Electrical Specifications
Interface	USB 2.0 Standard, USB 1.1 Compliant
Standards	IEEE802.11 / 802.11b / 802.11g/ 802.11n (draft 2.0 compliance)
Conformance	ARIB STD-T66 compliant
Data Transfer	IEEE 802.11b mode: DSSS (1, 2, 5.5 and 11 Mpbs)
Rate /	IEEE 802.11g mode: OFDM (6, 9, 12, 18, 24, 36, 48 and 54 Mpbs)
Modulation	draft 802.11n Standard-20 MHz Channel mode: OFDM (6.5, 7.2,
Method	13, 14.4, 14.44, 19.5, 21.7, 26, 28.89, 28.9, 39,
	43.3, 43.33 52, 57.78, 57.8, 58.5, 65.0, 72.2, 78,
	86.67, 104, 115.56, 117, 130, 144.44 Mbps)
	draft 802.11n Wide-40 MHz Channel mode: OFDM (13.5, 15, 27, 30,
	40.5, 45, 54, 60, 81, 90, 108, 120, 121.5, 135, 150, 162, 180, 216,
	240, 243, 270, 300 Mbps)
Access Methoa	Infrastructure Mode, Ad-Hoc Mode (802.11 Ad-Hoc), Roaming
Security	WEP64/128/152bit,TKIP,AES-CCMP,WPA-PSK,WPA2-PSK,802.1x, ,
	EAP-TLS,EAP-TTLS,PEAP(EAP-GTC),PEAP(EAP-MSCHAPv2),
	WPS(Jumpstar2.0)
Quality of	802.11e , WMM
Service (QOS)	
International	802.11d
Regulation	
Frequency	2.4 to 2.4835GHZ
	OFDM & DEEE (with Parker coding and CCK for backward
Mireless	OFDM & DSSS (WILLI DALKEL COULLY ALLA CON TOL DALKWALU compatibility with 202 11b)
Media Access	
Protocol	CSIMA / CA
Onerating	$1 \sim 11 (11 \leq \& Canada) 1 \sim 13 (channel availability depends on local$
Channels	regulations)
Transmit Power	18dBm (IFEE802.11a/n) / 12.5dBm (IEEE802.11b)
Settings	20dBm (IEEE802.11g/n 20) / 15dBm (IEEE802.11 g/n 40)
Receiver	1 Mbps : -88dBm
Sensitivity	2 Mbps ÷ -83dBm
	5.5 Mbps : -79dBm
	11 Mbps : -70dBm
	12 Mbps : -76dBm
	24 Mbps : -71dBm
	36 Mbps : -67dBm
	54 Mbps \div -62dBm
Internal	Built-in PCB 0dBi Antenna

Antenna Type	
LED Indicators	Power / Link
Power	-Power Save mode = 95mA
Consumption	-Stand by mode = 2mA
	-Transmit mode = 450mA
	-Receive Mode = 100mA
Operating	Windows XP, Windows Vista
systems	
I	Environmental & Mechanical Characteristics
Operating	32 °F ~ 131 °F (0 °C ~ 50 °C)
Temperature	
Storage	-13 °F ~ 158 °F (-20 °C ~ 70 °C)
Temperature	
Operating	10% to 80% Non-Condensing
Humidity	
Storage	5% to 90% Non-Condensing
Humidity	

5.1 Troubleshooting

- 1. My computer does not recognize the WUB1900 USB Network Adapter. Make sure that the Wireless-N USB Network Adapter is properly inserted into the USB port.
- **2. The WUB1900 USB Network Adapter does not work properly.** Reinsert the Wireless-N USB Network Adapter into the PC's USB port.
- 3. I cannot communicate with the other computers linked via Ethernet in the Infrastructure configuration.

Make sure that the notebook or desktop is powered on.

Make sure that the WUB1900 USB Network Adapter is configured with the same Wireless Network Name(SSID) and wireless security settings in your network.

5.2 Troubleshooting-B

1. The LED is off.

Make sure the device is inserted properly. Otherwise contact your local dealer for more information.

2. The LED is always on not blinking.

Make sure that you have installed the driver from attached CD-ROM. Otherwise contact your local dealer for more information.

3. The LED is blinking but the device icon does not appear in your icon tray.

Make sure that you have installed the Utility from the attached CD-ROM.

4. The device is linking, but cannot share files with others. Make sure the file and printer sharing function is enabled. You could enable the function by checking the icon of **My Computer / Control Panel / Network / file and printer sharing** I want to be able to give others to access to my files.

5. Slow or erratic performance.

Try changing the channel of the communicating group or moving your device closer to the communicating device.

6. Cannot find the utility icon in the task bar after plugged in the device.

You could enable the function by clicking the icon of **Start All Programs Wireless LAN Utility WUB1900 Utility**.

6.1 Glossary

IEEE 802.11 Standard

The IEEE 802.11 Wireless LAN standards subcommittee, which is formulating a standard for the industry.

Access Point

An internetworking device that seamlessly connects wired and wireless networks together.

Ad Hoc

An Ad Hoc wireless LAN is a group of computers, each with a WLAN adapter, connected as an independent wireless LAN. Ad Hoc wireless LAN is applicable at a departmental scale for a branch or SOHO operation.

BSSID

A specific Ad Hoc LAN is called a Basic Service Set (BSS). Computers in a BSS must be configured with the same BSSID.

DHCP

Dynamic Host Configuration Protocol, method in which IP addresses are assigned by server dynamically to clients on the network. DHCP is used for Dynamic IP Addressing and requires a dedicated DHCP server on the network.

Direct Sequence Spread Spectrum

This is the method the wireless cards use to transmit data over the frequency spectrum. The other method is frequency hopping. Direct sequence spreads the data over one frequency range (channel) while frequency hopping jumps from one narrow frequency band to another many times per second.

ESSID

An Infrastructure configuration could also support roaming capability for mobile workers. More than one BSS can be configured as an Extended Service Set (ESS). Users within an ESS could roam freely between BSSs while served as a continuous connection to the network wireless stations and Access Points within an ESS must be configured with the same ESSID and the same radio channel.14

Ethernet

Ethernet is a 10/100Mbps network that runs over dedicated home/office wiring. Users must be wired to the network at all times to gain access.

Gateway

A gateway is a hardware and software device that connects two dissimilar systems, such as a LAN and a mainframe. In Internet terminology, a gateway is another name for a router. Generally a gateway is used as a funnel for all traffic to the Internet.

IEEE

Institute of Electrical and Electronics Engineers.

Infrastructure

An integrated wireless and wired LAN is called an Infrastructure configuration. Infrastructure is applicable to enterprise scale for wireless access to central database, or wireless application for mobile workers.

ISM Band

The FCC and their counterparts outside of the U.S. have set aside bandwidth for unlicensed use in the so-called ISM (Industrial, Scientific and Medical) band. Spectrum in the vicinity of 2.4 GHz, in particular, is being made available worldwide. This presents a truly revolutionary opportunity to place convenient high-speed wireless capabilities in the hands of users around the globe.

Local Area Network (LAN)

A LAN is a group of computers, each equipped with the appropriate network adapter card connected by cable/air, that share applications, data, and peripherals. All connections are made via cable or wireless media, but a LAN does not use telephone services. It typically spans a single building or campus.

Network

A network is a system of computers that is connected. Data, files, and messages can be transmitted over this network. Networks may be local or wide area networks.

Protocol

A protocol is a standardized set of rules that specify how a conversation is to take place, including the format, timing, sequencing and/ or error checking.

Roaming

In an infrastructure network, this is when a wireless PC moves out of range of the previously connected access point and connects to a newly connected access point. Throughout the network environment where access point is deployed, PCs can always be connected regardless of where they are located or roam.

SSID

A Network ID unique to a network. Only clients and Access Points that share the same SSID are able to communicate with each other. This string is case-sensitive.

Simple Network Management Protocol (SNMP)

Simple Network Management Protocol is the network management protocol of TCP/IP. In SNMP, agents-which can be hardware as well as software-monitor the activity in the various devices on the network and report to the network console workstation. Control information about each device is maintained in a structure known as a management information block.

Static IP Addressing

A method of assigning IP addresses to clients on the network. In networks with Static IP address, the network administrator manually assigns an IP address to each computer. Once a Static IP address is assigned, a computer uses the same IP address every time it reboots and logs on to the network, unless it is manually changed.

Transmission Control Protocol / Internet Protocol (TCP/IP)

TCP/IP is the protocol suite developed by the Advanced Research Projects Agency

(ARPA). It is widely used in corporate Internet works, because of its superior design for WANs. TCP governs how packet is sequenced for transmission the network. The term [TCP/IP] is often used generically to refer to the entire suite of related protocols 16.

Transmit / Receive

The wireless throughput in Bytes per second averaged over two seconds.

Wide Area Network (WAN)

A WAN consists of multiple LANs that are tied together via telephone services and / or fiber optic cabling. WANs may span a city, a state, a country, or even the world.

Wireless LAN (WLAN)

A wireless LAN does not use cable to transmit signals, but rather uses radio or infrared to transmit packets through the air. Radio Frequency (RF) and infrared are the commonly used types of wireless transmission. Most wireless LANs use spread spectrum technology. It offers limited bandwidth, usually under 54Mbps, and users share the bandwidth with other devices in the spectrum; however, users can operate a spread spectrum device without licensing from the Federal Communications Commission (FCC).

6.5 Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Installation and use of this Wireless LAN device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications (including the antennas) made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, or the substitution of the connecting cables and equipment other than manufacturer specified. It is the responsibility of the user to correct any interference caused by such unauthorized modification, substitution or attachment. Manufacturer and its authorized resellers or

distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

FCC RF Radiation Exposure Statement: This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.

Your device contains a low power transmitter. When device is transmitted it sends out Radio Frequency (RF) signal.

" declare that WUB1900 (IEEE802.11 b/g/n USB Dongle) is limited in CH1~CH11 by specified firmware controlled in USA."

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

根據交通部 低功率管理辨法 規定:

- 第十二條 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。
- 第十四條 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。