

**SMC**<sup>®</sup>  
Networks

SMCWUSBT-G2 EZ Connect™ g  
802.11g 108Mbps Wireless  
USB 2.0 Adapter

USER GUIDE





# **EZ Connect™ g 802.11g 108Mbps Wireless USB 2.0 Adapter User Guide**

---

The easy way to make all your network connections

**SMC**®

**Networks**

38 Tesla

Irvine, CA 92618

Phone: (949) 679-8000

May 2006

R01 F1.0

## Copyright

Information furnished by SMC Networks, Inc. (SMC) is believed to be accurate and reliable. However, no responsibility is assumed by SMC for its use, nor for any infringements of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SMC. SMC reserves the right to change specifications at any time without notice.

Copyright © 2006 by  
SMC Networks, Inc.  
38 Tesla  
Irvine, CA 92618

All rights reserved.

### **Trademarks:**

SMC is a registered trademark; and EZ Connect g and EZ Switch are trademarks of SMC Networks, Inc. Other product and company names are trademarks or registered trademarks of their respective holders.

# COMPLIANCES

## 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. End users must follow the specific operating instructions for satisfying RF exposure compliance.

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 equipment has been SAR-evaluated for use in laptops (notebooks) with side slot configuration.

## Industry Canada Statement

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

## IMPORTANT NOTE: IC Radiation Exposure Statement:

This equipment complies with Canada radiation exposure limits set forth for uncontrolled environments. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

## Australia/New Zealand AS/NZS 4771



N11846

Contact SMC at:

SMC Networks, Inc.

38 Tesla

Irvine, CA 92618

Phone: (949) 679-8000

## EC Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC. The following references have been applied in order to prove presumption of compliance with the R&TTE Directive 1999/5/EC:

- EN 300 328 V1.6.1 (11-2004)
- EN 301 489-1 V1.5.1 (11-2004)
- EN 301 489-17 V1.2.1 (08-2002)
- EN 60950-1: 2001+A11:2004

Council recommendation 1999/519/EC of 12 July 1999, limitations of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz)

English	Hereby, SMC Networks, declares that this Radio LAN device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. The official EC-Declaration of Conformity can be found under the corresponding product section on the web <a href="http://www.smc.com">http://www.smc.com</a> .
Dutch	Hierbij verklaart SMC Networks dat het toestel Radio LAN device in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG. Het officiële EC- gelijkvormigheidattest kan men vinden op de internetsite <a href="http://www.smc.com">http://www.smc.com</a> onder de betrokken productcategorie.
French	Par la présente SMC Networks déclare que l'appareil Radio LAN device est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE. La déclaration de conformité officielle peut être trouvée sur notre site internet <a href="http://www.smc.com">http://www.smc.com</a> dans la rubrique Produits.
German	Hiermit erklärt SMC Networks, dass sich dieses Wireless LAN Gerät in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/EG befindet. Die offizielle EC-Declaration of Conformity finden Sie im Internet unter <a href="http://www.smc.com">http://www.smc.com</a> unter der entsprechenden Produktkategorie.
Spanish	Por medio de la presente SMC Networks declara que el Radio LAN device cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE. The official EC-Declaration of Conformity can be found under the corresponding product section on the web <a href="http://www.smc.com">http://www.smc.com</a> .

Countries of Operation & Conditions of Use in EC/ EFTA member states

English	<p>This device is a 2.4 GHz wireless LAN transceiver, intended for indoor home and office use in all notified EC and EFTA member states. In accordance with article 6.4 of the R&amp;TTE Directive 1999/5/EC the following EC/ EFTA member states have been notified: Austria, Belgium, Denmark, Finland, France, Germany, Italy, Luxembourg, Netherlands, Norway, Spain, Sweden, Switzerland, United Kingdom, Portugal, Greece, Ireland, Iceland</p> <p>Requirements for outdoor operation, like license requirements and allowed channels of operation apply in some countries. Please contact your local regulation authority or SMC Networks for details on current restrictions for outdoor use.</p>
Dutch	<p>Dit toestel is een 2.4 Ghz draadloze Lan transceiver, bestemd voor gebruik binnen huis en kantoor in alle geïnformeerde lidstaten van de EC en de EFTA.</p> <p>In overeenstemming met artikel 6.4 van de R&amp;T TE Directive 1999/5/EC zijn de volgende EC/EFTA lidstaten verwittigd:</p> <p>België, Denemarken, Duitsland, Finland, Frankrijk, Griekenland, Ierland, IJsland, Italië, Luxemburg, Nederland, Noorwegen, Oostenrijk, Portugal, Spanje, Verenigd Koninkrijk, Zweden, Zwitserland.</p> <p>Benodigdheden voor gebruik buiten, zoals gebruiksvergunningen en toegelaten werkkanalen zijn van toepassing in sommige landen. Gelieve uw lokale instantie of SMC Networks te contacteren voor details op huidige beperkingen voor gebruik in buitenlucht.</p>
French	<p>Ce produit est un appareil radio LAN transceiver de 2.4 GHz destiné aux PME et à l'utilisation domestique dans tous les pays certifiés conformes aux conditions de l'EU et de l'EFTA. En accord avec l'article 6.4 de la R&amp;TTE directive 1999/5/EC, the membres de la EU et de l'EFTA sont les suivants :</p> <p>Autriche, Belgique, Danemark, finalnde, France, Allemagne, Italie, Luxembourg, Pays-Bas, Norvège, Espagne, Suède, Suisse, Royaume-Uni, Portugal, Grèce, Irlande, Islande.</p> <p>Des conditions sont appliquées à certains pays pour l'utilisation en extérieur, tels que des licences spécifiques et des canaux d'opération. Veuillez contacter votre autorité locale ou SMC Networks pour plus de détails quant aux restrictions actuelles concernant l'utilisation en extérieur.</p>
German	<p>Dieses Wireless LAN Gerät arbeitet im 2.4 GHz Frequenzband und ist für den Einsatz im Innenbereich in den benachrichtigten EC/ EFTA Mitgliedstaaten geeignet. In Übereinstimmung mit Artikel 6.4 der R&amp;TTE Direktive 1999/5/EC wurden folgende Mitgliedstaaten benachrichtigt:</p> <p>Österreich, Belgien, Dänemark, Finland, Frankreich, Deutschland, Italien, Luxemburg, Niederlande, Norwegen, Spanien, Schweden, Schweiz, Großbritannien, Portugal, Griechenland, Irland, Island.</p> <p>Für den Einsatz im Aussenbereich sind in einigen Ländern Lizenzen erforderlich oder die Anzahl der Kanäle ist eingeschränkt. Bitte kontaktieren Sie Ihre Regulierungsbehörde oder SMC Networks für die aktuellen Einschränkungen beim Einsatz im Aussenbereich.</p>
Spanish	<p>Este aparato es un transmisor inalámbrico de 2.4 GHz, previsto para el uso interior en domicilios y Pymes en todos los Estados de la CE y la EFTA notificados. De acuerdo con el artículo 6.4 de la Directiva R&amp;TTE 1999/5/EC los siguientes estados de la CE y de la EFTA han sido notificados:</p> <p>Austria, Bélgica, Dinamarca, Finlandia, Francia, Alemania, Italia, Luxemburgo, Países Bajos, Noruega, España, Suecia, Suiza, Reino Unido, Portugal, Grecia, Irlanda, Islandia.</p> <p>Los requisitos para su uso exterior, como requerimiento de licencia y canales de operación permitidos se aplican en algunos países. Por favor contacte la autoridad reguladora local o SMC Networks para más detalles en relación con las restricciones actuales para uso exterior.</p>



SMC Contact for this device in Europe is:

SMC Networks Europe,  
Edificio Conata II,  
Calle Fructuos Gelabert 6-8, 2, 4a,  
08970 - Sant Joan Despi,  
Barcelona, Spain

## 申請 DGT 使用手冊必須包含之資訊：

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。

## Wichtige Sicherheitshinweise (Germany)

1. Bitte lesen Sie diese Hinweise sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie keine Flüssigoder Aerosolreiniger. Am besten eignet sich ein angefeuchtetes Tuch zur Reinigung.
4. Die Netzanschlusßsteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Beschädigungen hervorrufen.
7. Die Belüftungsöffnungen dienen der Luftzirkulation, die das Gerät vor Überhitzung schützt. Sorgen Sie dafür, daß diese Öffnungen nicht abgedeckt werden.
8. Beachten Sie beim Anschluß an das Stromnetz die Anschlußwerte.
9. Verlegen Sie die Netzanschlußleitung so, daß niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
10. Alle Hinweise und Warnungen, die sich am Gerät befinden, sind zu beachten.
11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
12. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.

## COMPLIANCES

13. Öffnen sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von autorisiertem Servicepersonal geöffnet werden.
14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
  - a. Netzkabel oder Netzstecker sind beschädigt.
  - b. Flüssigkeit ist in das Gerät eingedrungen.
  - c. Das Gerät war Feuchtigkeit ausgesetzt.
  - d. Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
  - e. Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
  - f. Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
15. Stellen Sie sicher, daß die Stromversorgung dieses Gerätes nach der EN 60950 geprüft ist. Ausgangswerte der Stromversorgung sollten die Werte von AC 7,5-8V, 50-60Hz nicht über oder unterschreiten sowie den minimalen Strom von 1A nicht unterschreiten.  
Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70dB(A) oder weniger.

# TABLE OF CONTENTS

<b>EZ Connect™ g 802.11g 108Mbps Wireless USB 2.0 Adapter</b> .....	<b>1</b>
Features .....	2
Applications .....	3
System Requirements .....	4
Package Contents .....	5
<b>Hardware Description</b> .....	<b>6</b>
LED .....	6
<b>Driver and Utility Installation</b> .....	<b>7</b>
For Windows 98SE/ME/2000/XP .....	7
EZ Installation Wizard CD .....	7
<b>Hardware Installation</b> .....	<b>14</b>
<b>SMCWUSBT-G2 Utility</b> .....	<b>16</b>
Configuration .....	17
Common .....	18
Security .....	19
Advanced .....	25
Link Information .....	26
IP Information .....	28
Site Survey .....	30
Version Information .....	31
<b>Network Configuration and Planning</b> .....	<b>32</b>
Network Topologies .....	32
Ad Hoc Wireless LAN .....	32
Infrastructure Wireless LANs .....	33
Setting the Communication Domain .....	34
Stationary Wireless PCs .....	34
Roaming Wireless PCs .....	34

*TABLE OF CONTENTS*

<b>Troubleshooting</b> .....	<b>36</b>
Adapter Installation Problems .....	36
Network Connection Problems .....	37
Maximum Distance Table .....	38
<b>Specifications</b> .....	<b>39</b>
General Specifications .....	39

# EZ CONNECT™ G 802.11G 108MBPS WIRELESS USB 2.0 ADAPTER

SMC's EZ Connect™ g 802.11g 108Mbps Wireless USB 2.0 Adapter (SMCWUSBT-G2) is a wireless USB adapter that seamlessly integrates with existing Ethernet networks to support applications such as mobile users or temporary conferences. This solution offers a high data rate and reliable wireless connectivity with considerable cost savings over wired LANs (which include long-term maintenance overhead for cabling). Just install enough wireless access points to cover your network area, plug wireless cards into your notebooks or computers, and start networking.

Using this card in conjunction with any SMC 802.11b/g wireless access point, you can create an instant network that integrates seamlessly with your existing LANs. Moreover, moving or expanding your network is as easy as moving or installing additional access points – no wires!

## **Features**

- Up to 108 Mbps data rate with turbo mode
- Backward compatible with the existing 802.11b WLAN infrastructure
- Enhances your network security with Wired Equivalent Privacy (WEP), Wi-Fi Protected Access (WPA), and WPA2
- Greater flexibility to locate or move networked PCs
- Easy Plug-n-Play installation and user-friendly configuration
- Integrates with or replaces wired LANs at dramatically lower cost than wired alternatives
- Orthogonal Frequency Division Multiplexing (OFDM) technology provides high speed connection

# Applications

EZ Connect wireless products offer fast, reliable, cost-effective network access for wireless clients in applications such as:

- **Remote access to corporate network information**  
Email, file transfer, and terminal emulation
- **Difficult-to-wire environments**  
Historic or old buildings, asbestos installations, and open areas where wiring is difficult to employ
- **Frequently changing environments**  
Retailers, manufacturers, and banks who frequently rearrange the workplace and change location
- **Temporary LANs for special projects or peak times**  
Trade shows, exhibitions, and construction sites that need to set up for a short time period. Retailers, airline, and shipping companies who need additional workstations for peak times
- **Access to databases for mobile workers**  
Doctors, nurses, retailers, office workers who need access to databases while being mobile in a hospital, retail store, office, campus, etc.
- **SOHO (Small Office Home Office) users**  
SOHO users who need quick and easy installation of a small network

## **System Requirements**

Before you install the Wireless USB Adapter, check your system for the following requirements:

- Available 2.0 USB slot
- A PC running Windows 98SE/ME/2000/XP
- CD-ROM drive
- Minimum of 32 MB RAM and 300 MHz CPU
- Minimum of 6 MB of free hard disk space for driver and utility installation
- Another IEEE 802.11g or 802.11b compliant device installed in your network, such as the SMC2804WBRP-G Wireless Cable/DSL Broadband Router with USB Print Server, or another machine with a wireless adapter, such as the SMCWPCI-G EZ Connect g 2.4GHz 802.11g Wireless PCI Card



## **Package Contents**

The Wireless USB Adapter package includes:

- 1 EZ Connect™ g 802.11g 108Mbps Wireless USB 2.0 Adapter (SMCWUSBT-G2)
- 1 EZ Installation Wizard and Documentation CD
- 1 Quick Installation Guide

Please register this product and upgrade the product warranty at <http://www.smc.com>

Please inform your dealer if there are any incorrect, missing or damaged parts. If possible, retain the carton and the original packing materials, in case there is a need to return the product.

# HARDWARE DESCRIPTION

The SMCWUSBT-G2 adapter provides 54 Mbps connections. It is fully compliant with the specification of the IEEE 802.11g standard. It can be installed in any computer running Windows 98SE/ME/2000/XP, with a 2.0 USB slot.

## LED

The Link LED indicator of the SMCWUSBT-G2 is described in the following figure and table.



**Figure 1. LED Indicator**

Status	Description
On (Green)	Indicates a valid connection.
Slow Flashing	Indicates that the adapter is scanning for available networks.
Fast Flashing	Indicates that the adapter is transmitting or receiving data.

# DRIVER AND UTILITY INSTALLATION

The EZ Installation Wizard and Documentation CD that comes with the package contains all the software, including the driver and utility for the SMCWUSBT-G2 adapter. Any new or updated software can be downloaded from the SMC web site at <http://www.smc.com>. Also, check the SMC web site for additional online support.

## For Windows 98SE/ME/2000/XP

It is recommended that you install the utility and driver software first, before inserting the adapter into your computer.

You may find that the screen shots here do not exactly match your version of Windows. This is because these screen shots were created from Windows XP. Steps for Windows 98SE/ME/2000, are similar, but not identical, to Windows XP.

### EZ Installation Wizard CD

**Note:** Installation processes such as this may require the use of your original licensed copy of Windows. Please have your Windows CD available BEFORE proceeding with the installation.

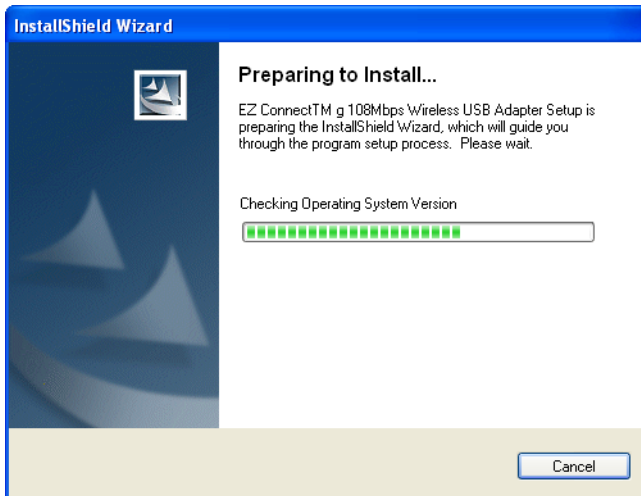
This installation method makes the process as simple and Plug-and-Play as possible. Simply run the driver/utility program, and insert your EZ Connect g Wireless USB 2.0 Adapter.

1. Insert the EZ Installation Wizard and Documentation CD.

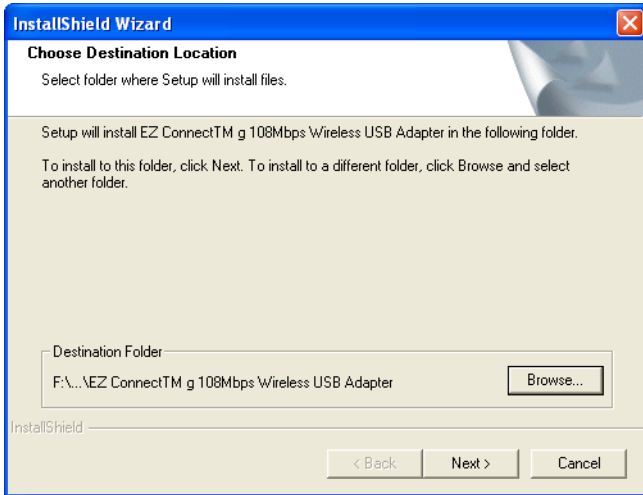
2. Click the **Install Driver/Utility** button to continue.



3. Please wait while the Driver/Utility installation wizard begins and copies files.



4. Click **Next** to install the program to your Windows system folder.



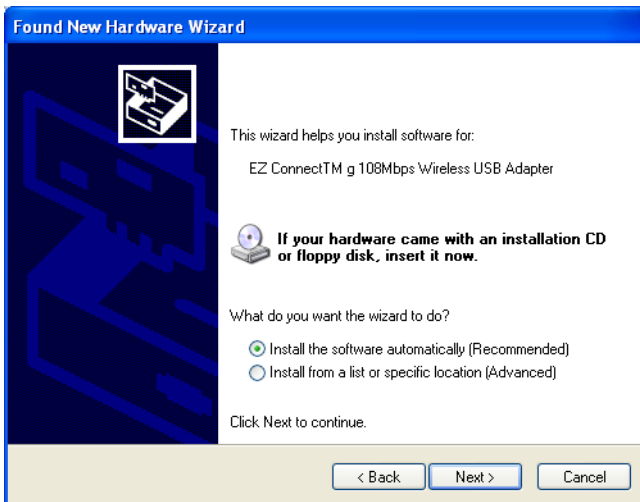
5. Find an available USB slot on your PC ( see "Hardware Installation" on page 14). Remove cap from the SMCWUSBT-G2. Completely slide the SMCWUSBT-G2 USB 2.0 adapter in the USB slot of your PC and make sure that there is a firm connection.



6. You will see the Found New Hardware Wizard. Select **Yes** (recommended), and click **Next**.



7. Select **Install the software automatically (Recommended)**, and click **Next**.

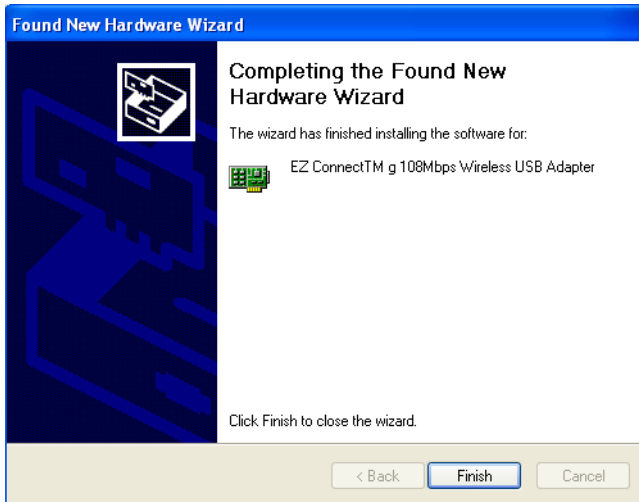


8. You may be prompted by a digital signature pop-up window. Click **Continue Anyway** to continue the driver installation.



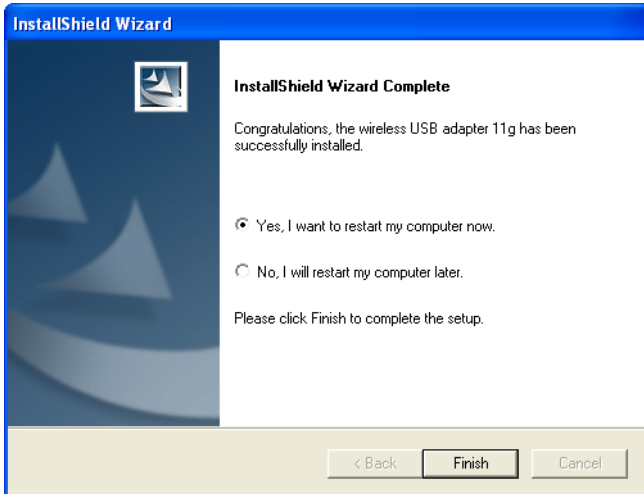
**Note:** Do not select STOP Installation, as this will cancel the installation process, and the drivers will not be installed properly.

9. The following windows will then appear indicating that the driver has been installed on your system. Click **Finish** to exit the window.





- 10. Select **Yes, I want to restart my computer now.** Click **Finish** and your PC will restart. After booting up, your Wireless USB Adapter is ready to use.**



# HARDWARE INSTALLATION

Network cards are sensitive to static electricity. To protect the card, avoid touching its electrical components, and touch the ground often to equalize the static charges, before handling the card.

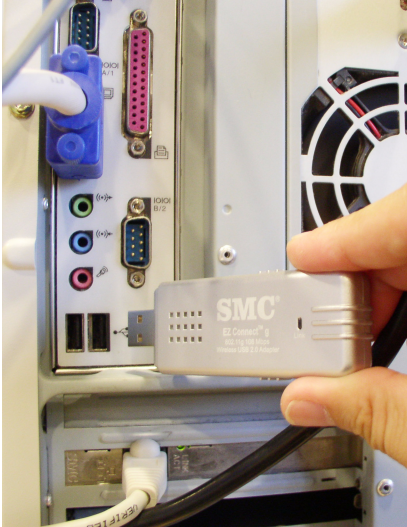
To insert the card:

1. Find an available 2.0 USB slot in your desktop PC or a laptop.



**Figure 2. USB Port**

2. With the adapter's connector facing the USB slot, and the "EZ Connect™ g" label facing up, slide the card completely into the slot as shown below.



**Figure 3. Desktop Installation**



**Figure 4. Laptop Installation**

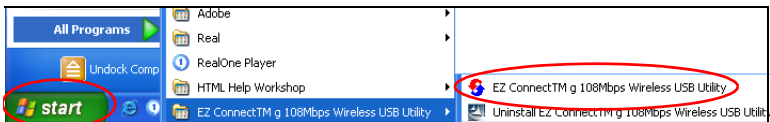
# SMCWUSBT-G2 UTILITY

To communicate with other SMC 802.11g or 802.11b devices, you need to configure the SMCWUSBT-G2 adapter first. Double-click the SMCWUSBT-G2 utility icon on the desktop to launch the configuration utility, or you can access it from the Start menu.

Icon on the desktop:



Icon on the toolbar:



Note that the screen shots were taken from Windows XP and will not look exactly the same in all operating systems.

The SMCWUSBT-G2 utility program includes the following five tabs:

**Configuration** – Allows you to set parameters for the wireless adapter.

**Link Information** – Allows you to view network status.

**IP Information** – Displays TCP/IP data.

**Site Survey** – Scans/shows all wireless devices within the adapter's signal range.

**Version Information** – Shows the driver and utility version information.

At the bottom of the screen, there are three boxes that can be selected:

- **Radio On/Radio Off** – This allows you to turn on/off the transmission/reception of the adapter.
- **Help** – Click here to display the help file.
- **Close** – This closes the configuration utility dialog box.

## Configuration

Go to the Configuration tab to set parameters for the SMCWUSBT-G2 adapter.

**Select Profile** – You can select a proper profile from the drop-down menu, or specify a profile name for a specific configuration of parameters.

**New** – To set up a new profile, click **New**.

**Save** – To save a new profile after configuring the settings, click **Save**.

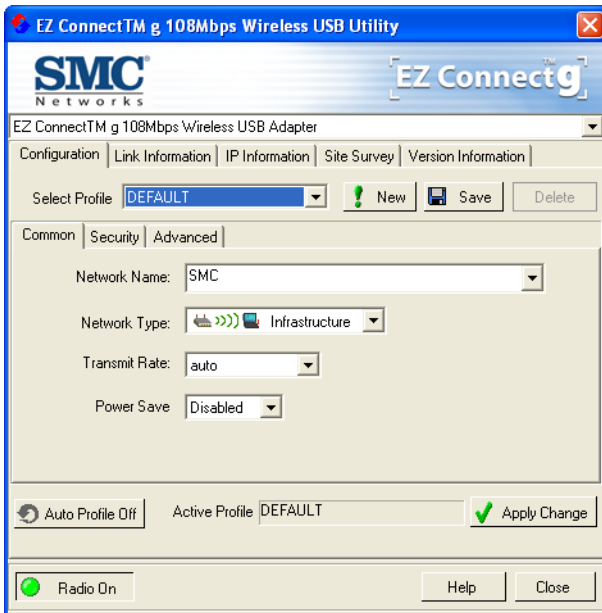
**Delete** – To delete a profile, select the profile from the drop-down menu in the Select Profile field, then click **Delete**.

**Auto Profile On/Off** - Click this button to automatically load the profile for easy use.

**Active** - To display the profile that you are using for the current connection.

**Apply Change** - To enable the new setting.

## Common



**Network Name** – Input an SSID for the wireless network to which you want to connect.

**Network Type** – Set the adapter's operating mode to 802.11 Ad Hoc for a network environment that does not have an access

point, or to Infrastructure for connections with an access point. (See “Network Topologies” on page 32 for more information.)

**Transmit Rate** – Indicates the data transmission rate. Select an appropriate transmission speed. Lower speeds will give better range.

The SMCWUSBT-G2 supports 802.11b, 802.11g and 802.11g turbo mode. SuperG is capable of Packet Bursting, Fast Frames, Compression, and Dynamic or Static Turbo. 802.11g turbo mode delivers the maximum operation speed of up to 108 Mbps. The Wireless USB Adapter supports both Dynamic and Static Turbo modes, and it is backwards compatible with non-Turbo (legacy) devices. However, the 802.11g static turbo mode is only enabled when all devices on the wireless network are also configured with static turbo mode.

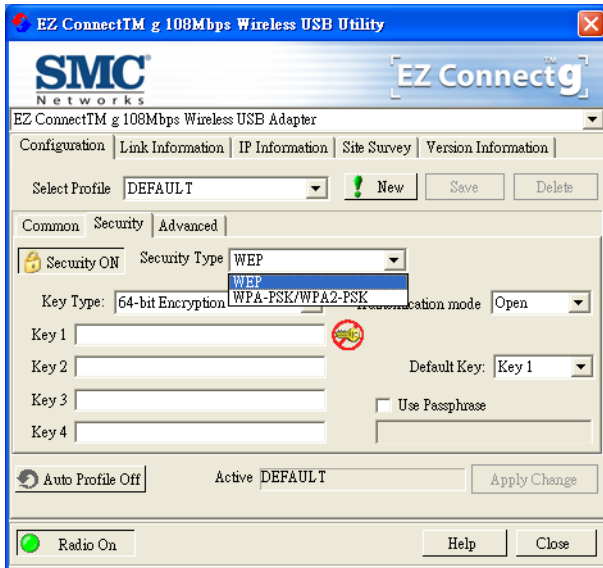
**Power Save** – To use this function, select the Enabled or Disabled in the Power Save Mode drop-down menu, then click the **Apply Change** button.

## **Security**

The Security ON/Security OFF button indicates whether the security function has been enabled or disabled.

Click the **Security ON/Security OFF** button to enable the security function. (Default: Security OFF)

**WEP**



**Security Type** – WEP (Wired Equivalent Privacy) and WPA(2)-PSK (Wi-Fi Protected Access-Pre-Shared Key) are implemented in the SMCWUSBT-G2 adapter to prevent unauthorized access.

**Key Type** – Select 64-bit encryption, 64-bit encryption (ASCII), 128-bit encryption, or 128-bit encryption (ASCII).

**Authentication Mode** – Choose Open or Shared.

**Default Key** – Choose one key, 1~4, for encryption.

**Use Passphrase** – Check this box to auto-generate keys for encryption. First, check this box, then enter a string of characters into the space. Encryption keys will be generated automatically.

When Key Type is set to 128-bit, only one key will be generated. If Key Type is set to 64-bit, four keys will be generated. Note that



you must use the same passphrase and default key on all the other clients in your network.

**How to set up WEP:**

If you are transmitting sensitive data across wireless channels, you should enable Wired Equivalent Privacy (WEP) encryption. WEP provides a basic level of security, preventing unauthorized access to the network and encrypting data transmitted between wireless clients and the access point. WEP uses static shared keys (fixed-length hexadecimal or alphanumeric strings) that are manually distributed to all clients that want to use the network. WEP is the security protocol initially specified in the IEEE 802.11 standard for wireless communications. For more robust wireless security, the SMCWUSBT-G2 provides Wi-Fi Protected Access (WPA) for improved data encryption and user authentication.

**Note:** Only one key is needed for WEP to function. However, the IEEE 802.11 standard specifies that there must be four keys for each device. For security purposes, the key should be changed on a regular basis. Multiple keys are supported to allow the user to change keys with minimal disruption of the network.

To set up the WEP function, take the following steps:

1. Select 64-bit encryption, 64-bit encryption (ASCII), 128-bit encryption, or 128-bit encryption (ASCII) in the Key Type field.
2. To automatically generate keys, check the **Use Passphrase** box, and type in a string of characters in this field.
3. In the Default Key field, select one key as the default key that you want to use for encryption.
4. Click **Apply Change** to allow the settings to take effect.

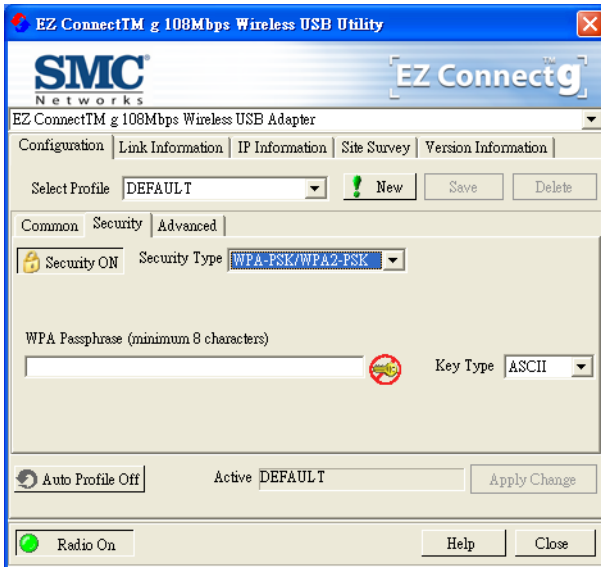
Or

1. Select 64-bit encryption, 64-bit encryption (ASCII), 128-bit encryption, or 128-bit encryption (ASCII) in the Key Type field.
2. In the Default Key field, select one key as the default key that you want to use for encryption.
3. Manually type in a string of characters in the corresponding key number field that you selected in step 2.
4. Click **Apply Change** to allow the settings to take effect.

**Note:** When setting up WEP without using the Use Passphrase function, if the Key Type is set to Hex, only Hexadecimal characters (range: 0~9 and A~F) can be used. When encryption is set to 64-bit, a maximum of 10 Hex characters can be entered in the Key field. When encryption is set to 128-bit, a maximum of 26 Hex characters can be used. If the Key Type is set to ASCII, and encryption is set to 64-bit, then 5 ASCII characters can be used in the Key field. For 128-bit encryption, 13 ASCII characters can be used.

## WPA-PSK

### How to set up WPA/WPA2-PSK:



Wi-Fi Protected Access is a standards-based, interoperable security enhancement that strongly increases the level of data protection and access control for existing and future wireless LAN systems. It will be forward-compatible with the upcoming IEEE 802.11i standard. WPA employs a combination of several technologies to provide an enhanced security solution for 802.11 wireless networks, including TKIP (Temporal Key Integrity Protocol) for data protection and 802.1x for authenticated key management. WPA provides a simple operating mode that uses just a pre-shared password for network access. The Pre-Shared Key mode uses a common password for user authentication that is manually entered on the access point and all wireless clients on the network.

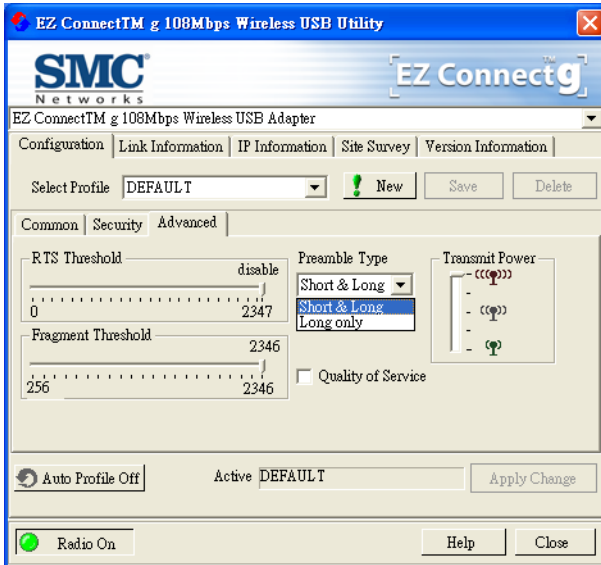
To use the WPA function, take the following steps:

1. Select Security Type, WPA-PSK/WPA2-PSK from the drop-down menu.
2. Type in the WPA Passphrase (Pre-Shared Key: PSK).
3. Select **ASCII** or **Hex** in the Key Type field
4. Click **Apply Change** to allow the settings to take effect.

**Note:** The WPA Passphrase character limit needs to be between 8-63 characters.

Manual Pre-Shared Key supports up to 64-Hex characters. If there is no authentication server on your SOHO network, you can issue the Pre-Shared Key to the adapter that is connected to the access point. Be sure to use the same key for the wireless access point and the connected adapter.

## Advanced



**RTS Threshold** – This sets the packet size threshold at which a Request to Send (RTS) signal must be sent to the receiving station prior to the sending station starting communications. Devices contending for the wireless medium may not be aware of each other. The RTS/CTS mechanism can solve this problem. The larger the threshold, the faster the speed.

**Fragment Threshold** – Sets the minimum packet size that can be transmitted from the adapter without being fragmented. Fragmentation can increase the reliability of transmissions because it increases the probability of a successful transmission due to smaller frame size. The larger the threshold, the faster the speed.

**Preamble Type** – The preamble is used to acquire the incoming signal and synchronize the receiver. If all the clients in your service area support the short preamble or can automatically set the preamble type, then setting the preamble on the access point

to short can boost your throughput. (Options: Short & Long, Long only; Default: Short & Long)

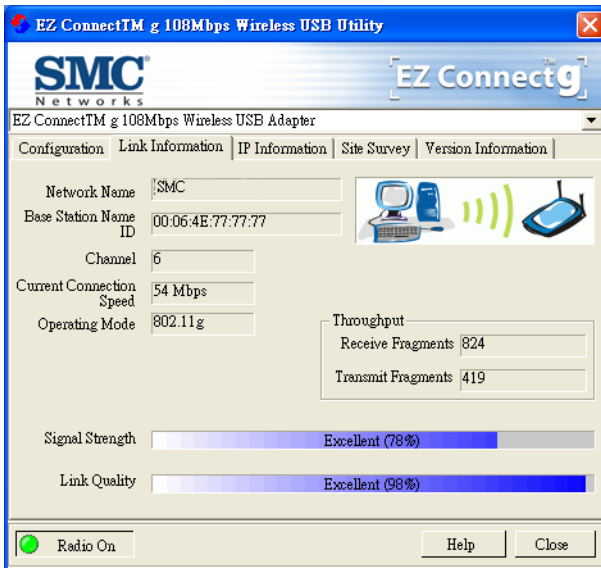
**Transmit Power** – Move the slider bar up and down to select an appropriate transmission power. Lower power reduces interference, higher power gives more range.

**Quality of Service (QoS)** – The QoS function allows you to differentiate traffic types and provide high-priority forwarding service for applications such as VoIP or gaming.

Check the Quality of Service checkbox to enable or disable this function.

## Link Information

The Link Information screen displays information of the current wireless access point to which you are connected.



**Network Name** – The name of the network to which the adapter is currently connected with other clients on the network.

**Base Station Name ID** – The MAC address of the access point to which this adapter is connected in an infrastructure network. In an ad hoc network, the Network Name is a random number generated by the first station that communicates with other clients on the network.

**Channel** – The channel used to connect with the wireless device.

**Current Connection Speed** – The data transmission speed.

**Operating Mode** – This adapter supports 802.11b and 802.11g mode.

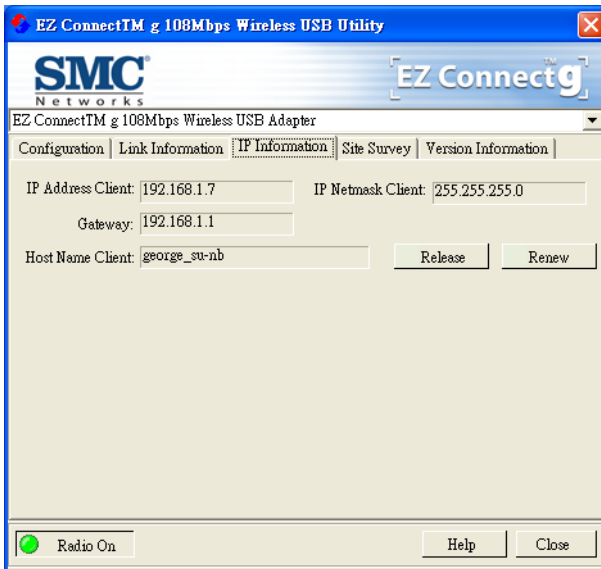
**Throughput** – Shows the total number of data packets transmitted and received.

**Signal Strength** – Shows the strength of the connection between the adapter and the access point.

**Link Quality** – Shows the link quality of the wireless connection.

## IP Information

This screen displays IP Information for your computer. Now that you have configured your adapter to connect to a wireless network, your adapter needs to obtain new network settings. By releasing old IP settings and renewing them with settings from the access point, you will also verify that you have configured your adapter correctly. To release network settings click on **Release**, then click on **Renew** to get new IP settings.





**IP Address Client** – Internet address of the computer.

**IP Netmask Client** – A mask used to determine the subnet for an IP address.

**Gateway** – The IP address of the network gateway.

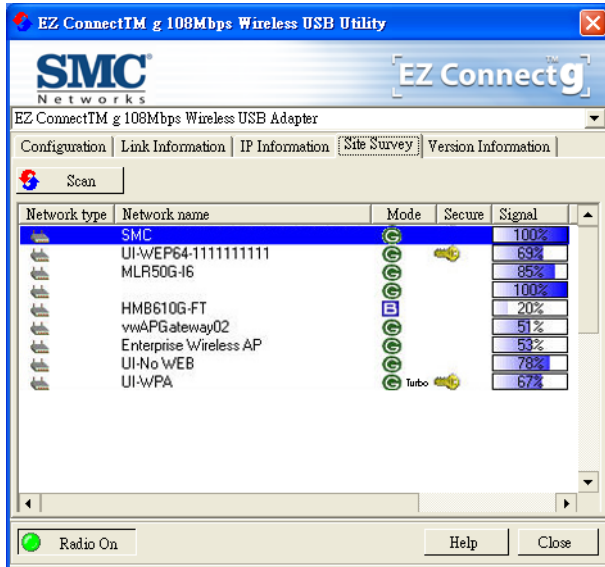
**Host Name Client** – Your computer name on the network.

**Release** – Click on this button to release the IP address.

**Renew** – Click on this button to get a new IP address.

## Site Survey

Site Survey scans and displays all wireless devices within range. You can choose one of them to connect to by double-clicking on an entry.



**Scan** – Click this button to scan for available network connections.

**Network Type** - Shows the network type. See “Configuration” on page 17.

**Network name** – Service Set ID. (See “Configuration” on page 17 for details.)

**Mode** - Shows the wireless connection mode, whether it's 802.11b or 802.11g (Turbo).

**Secure** - This shows security mechanism has been enabled. A key icon indicates the encryption function is enabled.

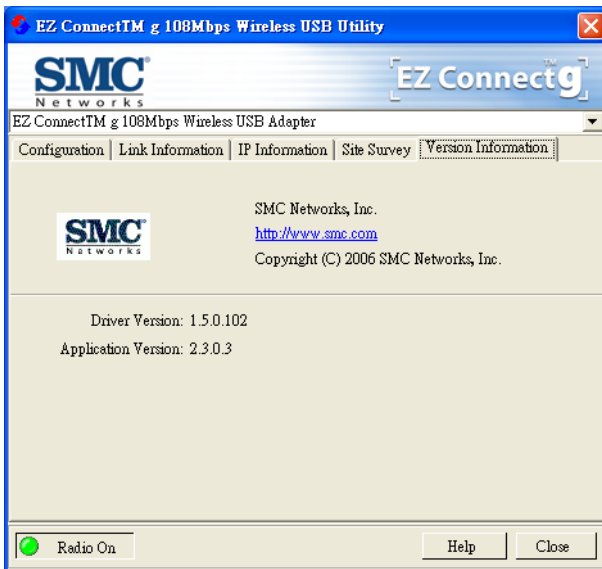
**Signal** - This shows the signal strength of the listed wireless devices.

**Channel** - This is the channel used for the wireless connection.

**MAC address** - This is the MAC address of the listed wireless devices.

## Version Information

This screen shows information on the current version of the driver and the configuration utility program. You can download the latest firmware from the SMC web site at <http://www.smc.com>.



# NETWORK CONFIGURATION AND PLANNING

SMC's EZ Connect g Wireless Solution supports a stand-alone wireless network configuration, as well as an integrated configuration with 10/100 Mbps Ethernet LANs.

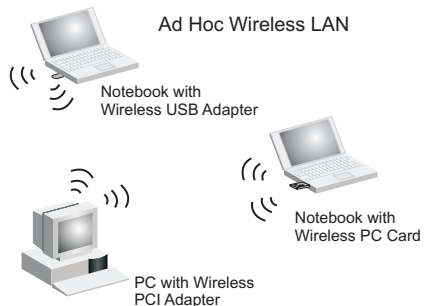
The SMCWUSB-G2 can be configured as:

- Ad hoc - for small groups that only communicate with each other, without access points
- Infrastructure - for wireless LANs

## Network Topologies

### Ad Hoc Wireless LAN

An ad hoc wireless LAN consists of a group of computers, each equipped with one wireless adapter, connected via radio signals as an independent wireless LAN. Computers in a specific ad hoc wireless LAN must therefore be configured to the same radio channel. An ad hoc wireless LAN can be used in a SOHO or temporary environment.

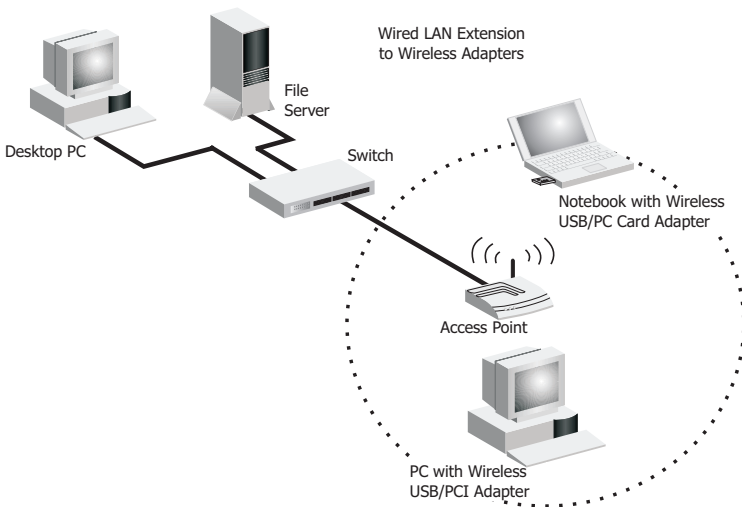


## Infrastructure Wireless LANs

The SMC 802.11g access point (SMCWBR14T-G) can also provide wireless workstations with access to a wired LAN. An integrated wired and wireless LAN is called an infrastructure configuration. A Basic Service Set (BSS) consists of a group of wireless PC users, and an access point that is directly connected to the wired LAN. Each wireless PC in this BSS can talk to any computer in its wireless group via a radio link, or access other computers or network resources in the wired LAN infrastructure via the access point.

The infrastructure configuration not only extends the accessibility of wireless PCs to the wired LAN, but also extends the effective wireless transmission range for wireless PCs by passing their signal through one or more access points.

A wireless infrastructure can be used for access to a central database, or for connection between mobile workers, as shown in the following figure.



## **Setting the Communication Domain**

### **Stationary Wireless PCs**

The Basic Service Set (BSS) is the communication domain for each access point. For wireless PCs that do not need to support roaming, set the domain identifier (SSID) for the wireless card to the SSID of the access point to which you want to connect. Check with your administrator for the SSID of the access point to which you are connecting.

### **Roaming Wireless PCs**

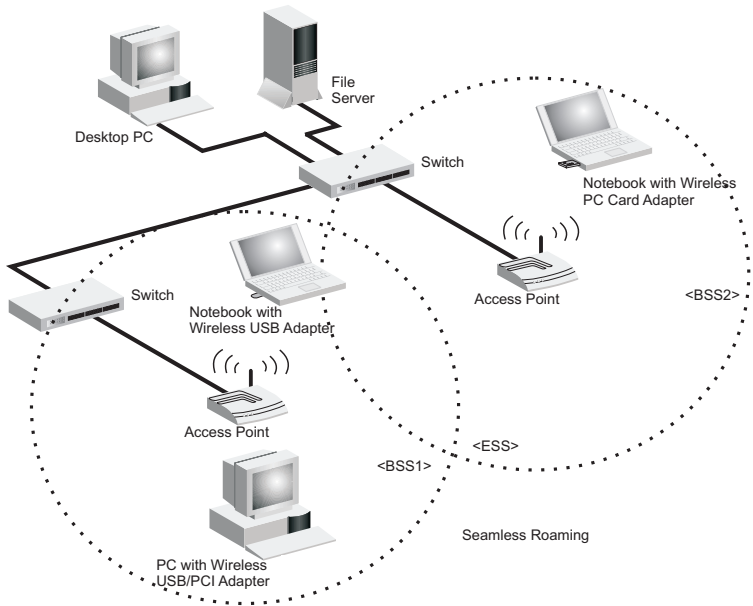
A wireless infrastructure can also support roaming for mobile workers. More than one access point can be configured to create an Extended Service Set (ESS). By placing the access points so that a continuous coverage area is created, wireless users within this ESS can roam freely. All wireless adapters and access points within a specific ESS must be configured with the same SSID and to the same radio channel.

You can configure the wireless client to connect to a specific wireless network or to the first available wireless network.

- If you configure the client to connect to a specific wireless network, the client establishes a radio connection to the AP in the specified wireless network that provides the best communications quality. APs in a different wireless network are ignored.
- If you configure the client to connect to the first available wireless network (the SSID = ANY), the client establishes a radio connection to the AP that provides the best communications quality. Be aware that if there are multiple wireless networks, the client could connect to an AP that is not in the network you want to join.

## Setting the Communication Domain

- In either configuration, the client automatically matches the radio channel used by the AP.



# TROUBLESHOOTING

Check the following troubleshooting items before contacting SMC technical support.

## Adapter Installation Problems

If your computer cannot find the SMCWUSBT-G2 adapter or the driver software does not install correctly, check the following:

- Make sure the adapter is securely seated in the 2.0 USB slot. Check for any hardware problems, such as physical damage to the card's connector.
- Try the card in another USB slot. If this also fails, test your PC with another wireless adapter that is known to operate correctly.
- Make sure your PC is using the latest BIOS.
- If there are other network adapters in the PC, they may be causing conflicts. Remove all other adapters from the PC and test the wireless adapter separately.
- If it still does not work, go to "Control Panel" and delete the adapter from your system. Remove the wireless adapter from your computer. Restart your computer and reinstall the card and the driver and utility.



## **Network Connection Problems**

If the Link LED on the SMCWUSB-G2 adapter does not light, or if you cannot access any network resources from your computer, check the following:

- Make sure the correct software driver is installed for your operating system. If necessary, try reinstalling the driver.
- Make sure the computer and other network devices are receiving power.
- The access point you want to connect to may be defective. Try using another access point.
- Make sure the SSID and security settings of the adapter are set to the same as the access point to which you are connecting.

If your wireless station cannot communicate with a computer in the Ethernet LAN when configured for Infrastructure mode, check the following:

- Make sure the access point that the station is associated with is powered on.
- If the connection still fails, change the access point and all the clients within the BSS to another radio channel.
- For a station with roaming disabled, make sure the SSID is the same as that used by the access point, or the same as that used by the access points in the extended service set (ESS).

## Maximum Distance Table

### Important Notice

Maximum distances posted below are actual tested distance thresholds. However, there are many variables such as barrier composition and construction and local environmental interference that may impact your actual distances and cause you to experience distance thresholds far lower than those posted below.

802.11b Wireless Distance Table			
Speed and Distance Ranges			
Environment	11 Mbps	5.5 Mbps	2 Mbps
Outdoors <sup>1</sup>	190 m 623 ft	240 m 787 ft	350 m 1155 ft
Indoors <sup>2</sup>	60 m 197 ft	100 m 328 ft	180m 591 ft

802.11g Wireless Distance Table							
Speed and Distance Ranges							
Environment	54 Mbps	48 Mbps	36 Mbps	24 Mbps	18 Mbps	12 Mbps	6-9 Mbps
Outdoors <sup>1</sup>	60 m 197 ft	90 m 295 ft	150 m 492 ft	190 m 623 ft	220 m 722 ft	270 m 886 ft	350 m 1155 ft
Indoors <sup>2</sup>	40 m 131 ft	50 m 164 ft	60 m 197 ft	65 m 312 ft	70 m 230 ft	110 m 361 ft	180 m 591 ft

**Notes:** 1. Outdoor Environment: A line-of-sight environment with no interference or obstruction between the access point and users.

2. Indoor Environment: A typical office or home environment with floor to ceiling obstructions between the access point and users.

# SPECIFICATIONS

## General Specifications

### *Functional Criteria*

#### **Data Rate**

802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54 Mbps; up to  
108 Mbps with turbo mode

802.11b: 1, 2, 5.5, 11 Mbps

#### **Operating Range**

Up to 350 m (1155 ft)

### *Radio Signal*

#### **Signal Type**

Orthogonal Frequency Division Multiplexing (OFDM)

Direct Sequence Spread Spectrum (DSSS)

#### **Modulation Techniques**

802.11g (OFDM): BPSK, QPSK, 16-QAM, 64-QAM

802.11b (DSSS): Complementary Code Keying (CCK)

#### **Channel Support**

USA/Taiwan: 1-11

IC: 1-11

ETSI: 1-13

STD-T66/STD-33: 1-14

#### **RF Output Power**

23±1 dBm

## *Specifications*

### ***Physical Characteristics***

#### **Dimensions**

84.10 \* 27.08 \* 12.30 mm (3.31 \* 1.07 \* 0.48 inch) (L\*W\*H)

#### **Weight**

27.5 g (0.06 lb)

#### **Antenna**

Built-in antenna

#### **LED Indicators**

Network Link

#### **Host Interface**

32-bit 2.0 USB interface

#### **Power Voltage**

DC5V +/- 5%

#### **Power Consumption**

Tx mode: 320mA, Rx mode: 190 mA

### ***Standards Conformance***

IEEE 802.11g

IEEE 802.11b

### ***Environmental***

#### **Temperature**

Operating: 0 to 45 °C (32 to 113 °F)

Storage: -20 to 70 °C (-4 to 158 °F)

#### **Humidity**

5 to 95% (non-condensing)

***Certification***

**CE Mark**

EN 300 328 V1.6.1 (11-2004)

EN 301 489-1 V1.5.1 (11-2004)

EN 301 489-17 V1.2.1 (08-2002)

EN 60950-1: 2001+A11:2004

**Safety Compliance**

USA: FCC Part 15 Class B

UL1950/CSA22.2 No.950

IEC 60950

***Software Drivers***

Windows 98SE

Windows ME

Windows 2000

Windows XP

MAC OS

## *Specifications*



**FOR TECHNICAL SUPPORT, CALL:**

From U.S.A. and Canada (24 hours a day, 7 days a week)

(800) SMC-4-YOU; Phn: (949) 679-8000; Fax: (949) 679-1481

From Europe : Contact details can be found on

[www.smc-europe.com](http://www.smc-europe.com) or [www.smc.com](http://www.smc.com)

**INTERNET**

E-mail addresses:

[techsupport@smc.com](mailto:techsupport@smc.com)

[european.techsupport@smc-europe.com](mailto:european.techsupport@smc-europe.com)

Driver updates:

[http://www.smc.com/index.cfm?action=tech\\_support\\_drivers\\_downloads](http://www.smc.com/index.cfm?action=tech_support_drivers_downloads)

World Wide Web:

<http://www.smc.com>

<http://www.smc-europe.com>

**FOR LITERATURE OR ADVERTISING RESPONSE, CALL:**

U.S.A. and Canada:

(800) SMC-4-YOU;

Fax (949) 679-1481

Spain:

34-91-352-00-40;

Fax 34-93-477-3774

UK:

44 (0) 1932 866553;

Fax 44 (0) 118 974 8701

France:

33 (0) 41 38 32 32;

Fax 33 (0) 41 38 01 58

Italy:

39 (0) 335 5708602;

Fax 39 02 739 14 17

Benelux:

31 33 455 72 88;

Fax 31 33 455 73 30

Central Europe:

49 (0) 89 92861-0;

Fax 49 (0) 89 92861-230

Nordic:

46 (0) 868 70700;

Fax 46 (0) 887 62 62

Eastern Europe:

34 -93-477-4920;

Fax 34 93 477 3774

Sub Saharian Africa:

216-712-36616;

Fax 216-71751415

North West Africa:

34 93 477 4920;

Fax 34 93 477 3774

CIS:

7 (095) 7893573;

Fax 7 (095) 789 35 73

PRC:

86-10-6235-4958;

Fax 86-10-6235-4962

Taiwan:

886-2-8797-8006;

Fax 886-2-8797-6288

Asia Pacific:

(65) 238 6556;

Fax (65) 238 6466

Korea:

82-2-553-0860;

Fax 82-2-553-7202

Japan:

81-45-224-2332;

Fax 81-45-224-2331

Australia:

61-2-8875-7887;

Fax 61-2-8875-7777

India:

91-22-8204437;

Fax 91-22-8204443

If you are looking for further contact information, please visit

[www.smc.com](http://www.smc.com), [www.smc-europe.com](http://www.smc-europe.com), or [www.smc-asia.com](http://www.smc-asia.com).

38 Tesla

Irvine, CA 92618

Phone: (949) 679-8000

Model Number: SMCWUSBT-G2

Revision number: E052006-R01 V1.0