

Corinex

**Wireless G USB
Mini Adapter**



Manual

Declaration of Conformity

CE 0560 !

Model: **Corinex Wireless G USB Mini Adapter**

Manufacturer: **Corinex Communications Corp.
670-789 West Pender Street
Vancouver, BC
Canada V6C 1H2**

Directives which Conformity is Declared:

R&TTE: 1999/5/EEC

Standards which Conformity is Declared:

**ETS 300-826
ETS 300-328
EN 60950**

The undersigned hereby declares the above specified equipment conforms to the above directives and standards.

Printed name / Title: **Peter Sobotka / CEO**

Place / Date: **Vancouver / Mar. 1. 2005**

Signature: 

For US Market Only



Model: **Corinex Wireless G USB Mini Adapter**

FCC ID: PANWL2203

Manufacturer: **Corinex Communications Corp.**
670-789 West Pender Street
Vancouver, BC
Canada V6C 1H2

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.

User Warning !

Any changes or modification to said product not expressly approved by Corinex could void the user's authority to operate the equipment.

Printed name / Title: **Peter Sobotka / CEO**

Place / Date: **Vancouver / Mar. 1. 2005**

Signature: 

This document, as well as the software described in it, is furnished under license and may be used or copied only in accordance with the terms of the license. The content of this document is furnished for informational use only, it is subject to change without notice, and it does not represent a commitment on the part of Corinex Communications Corp.

Corinex Communications Corp. assumes no responsibility or liability for any errors or inaccuracies that may appear in this document.

It is our policy to enhance our products as new technologies, hardware components, software and firmware become available; therefore, the information contained in this document is subject to change without notice.

Some features, functions, and operations described in this document may not be included and sold in certain countries due to government regulations or marketing policies.

The use of the product or its features described in this document may be restricted or regulated by law in some countries. If you are unsure which restrictions or regulations apply, you should consult your regional Corinex office or the authorized reseller.

Published by:

Corinex Communications Corp.
#670-789 West Pender Street
Vancouver, B.C.
Canada V6C 1H2
Tel.: +1 604 692 0520
Fax: +1 604 694 0061

Corinex is a registered trademark of Corinex Communications Corp.

Microsoft, MS-DOS, MS, Windows are either registered trademarks or trademarks of Microsoft Corporation in the U.S.A. and/or other countries.

All products or company names mentioned herein may be the trademarks of their respective owners.

Copyright (c) 2001-2005 by Corinex Communications Corp.

NOTE: This equipment has been tested and found to comply with the limits for Class B information technology equipment. 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, the end user is advised to take adequate measures.

CORINEX COMMUNICATIONS CORPORATION

This End User License Agreement (“EULA”) is a legal agreement between you and CORINEX COMMUNICATIONS CORPORATION (“CORINEX”) with regard to the copyrighted Software provided with this EULA.

Use of any software and related documentation (“Software”) provided with a CORINEX hardware product, or made available to you by CORINEX via download or otherwise, in whatever form or media, will constitute your acceptance of these terms, unless separate terms are provided by the software supplier, in which case certain additional or different terms may apply. If you do not agree with the terms of this EULA, do not download, install, copy or use the Software.

1. License Grant. CORINEX grants to you a personal, non-transferable and non-exclusive right to use the copy of the Software provided with this EULA. You agree you will not copy the Software except as necessary to use it on a single hardware product system. You agree that you may not copy the written materials accompanying the Software. Modifying, translating, renting, copying, transferring or assigning all or part of the Software, or any rights granted hereunder, to any other persons, and removing any proprietary notices, labels or marks from the Software is strictly prohibited. Furthermore, you hereby agree not to create derivative works based on the Software. You may permanently transfer all of your rights under this EULA, provided you retain no copies, you transfer all of the Software, and the recipient agrees to the terms of this EULA. If the Software is an upgrade, any transfer must include all prior versions of the Software.
2. Copyright. The Software is licensed, not sold. You acknowledge that no title to the intellectual property in the Software is transferred to you. You further acknowledge that title and full ownership rights to the Software will remain the exclusive property of Corinex Communications Corporation and/or its suppliers, and you will not acquire any rights to the Software, except as expressly set forth above. All copies of the Software will contain the same proprietary notices as contained in or on the Software.
3. Reverse Engineering. You agree that you will not attempt, and if you are a corporation, you will use your best efforts to prevent your employees and contractors from attempting to reverse compile, modify, translate or disassemble the Software in whole or in part. Any failure to comply with the above or any other terms and conditions contained herein will result in the automatic termination of this license and the reversion of the rights granted hereunder to CORINEX.
4. Disclaimer of Warranty. The Software is provided “AS IS” without warranty of any kind. CORINEX and its suppliers disclaim and make no express or implied warranties and specifically disclaim warranties of merchantability, fitness for a particular purpose and non-infringement of third-party rights. The entire risk as to the quality and performance of the Software is with you. Neither CORINEX nor its suppliers warrant that the functions contained in the Software will meet your requirements or that the operation of the Software will be uninterrupted or error-free.
5. Limitation of Liability. Corinex’s entire liability and your exclusive remedy under this EULA shall not exceed the price paid for the Software, if any. In no event shall CORINEX or its suppliers be liable to you for any consequential, special, incidental or indirect damages of any kind arising out of the use or inability to use the software, even if CORINEX or its supplier has been advised of the possibility of such damages, or any claim by a third party.
6. Applicable Laws. This EULA will be governed by the laws of Canada, excluding its conflict of law provisions.

7. Export Laws. This EULA involves products and/or technical data that may be controlled under any applicable export control laws, and regulation, and may be subject to any approval required under such laws and regulations.
8. Precedence. Except as set out above, where separate terms are provided by the software supplier, then, subject to this EULA, those terms also apply and prevail, to the extent of any inconsistency with this EULA.

Quick Start

Thank you for purchasing the *Corinex Wireless G USB Mini Adapter*. Please follow the steps below to successfully install the hardware and software.

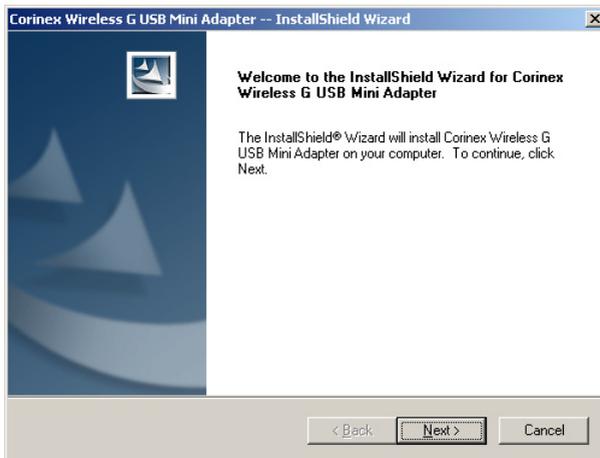
NOTE: Please don't connect the *Corinex Wireless G USB Mini Adapter* to your PC before step 4.

Step 1

Insert the included CD into your CD-ROM drive. The installer should start automatically. If it does not, please navigate to the root folder of the CD by clicking on **My Computer** and then on the **Compact Disc** icon, and execute the file **setup.exe**. The following screen will appear:



Please wait until the InstallShield Wizard starts completely and the welcome screen appears.



Proceed by clicking the **Next** button.

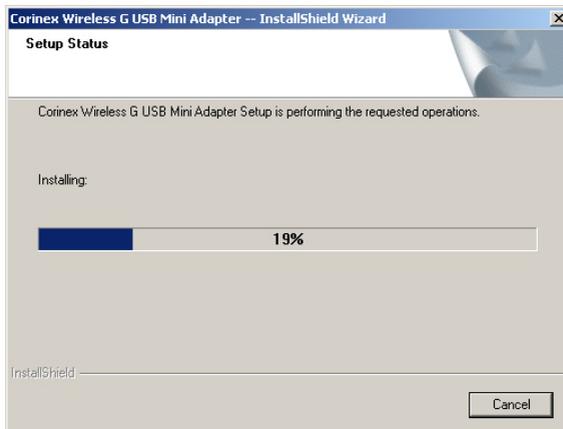
Step 2

On the next screen, you may select where to install the utility for configuration of the *Corinex Wireless G USB Mini Adapter*. If you are satisfied with the default setting, click **Next**. Otherwise, click **Browse** to select the path manually and confirm your choice by clicking **Next**.

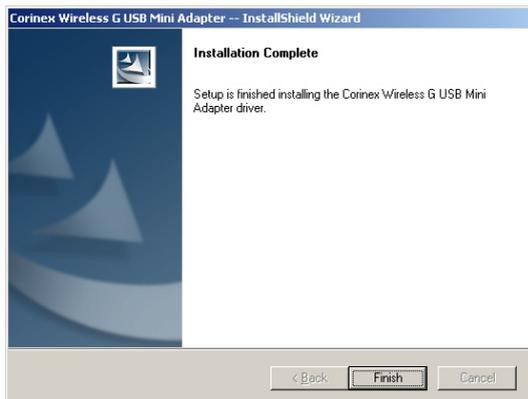


Step 3

The installer will now install the drivers in your system and copy all the necessary files to the specified folder.



Please wait until the files are copied. The following screen will appear.



In Windows XP, shortly after this screen appears, you may encounter a system warning saying that the software has not passed Windows Logo testing. Please accept this warning by clicking **Continue anyway**.

Finally, click **Finish** to close the installation wizard.

Step 4

Now you can connect the *Corinex Wireless G USB Mini Adapter* to your computer. Windows will detect a new device and start the installation. Please wait until the installation is finished. In Windows XP, during the installation, you will encounter a system warning saying that the software has not passed Windows Logo testing. Please accept this warning by clicking **Continue anyway** and proceed the installation.

The *Corinex Wireless G USB Mini Adapter* is now ready to use. Please refer to the user guide for configuration and a detailed description of the functionality.

Contents

Copyright	1
End User License Agreement	2
Quick Start	4
Contents	7
1. Introduction	8
1.1 Overview	8
1.2 Package Contents	8
1.3 Features	8
1.4 System Requirements	8
2. Using the Corinex Wireless G USB Mini Adapter	9
2.1 Overview	9
2.2 Installation	9
3. Configuration	12
3.1 Station Mode	13
3.2 Access Point Mode	24
4. Troubleshooting	31
5. Glossary	32



Introduction

1.1 Overview

With a *Corinex Wireless G USB Mini Adapter*, you can enter the world of wireless communication and enjoy all the advantages of networking without cables. The *Corinex Wireless G USB Mini Adapter* is two devices in one, an 802.11g compliant network interface card and a fully featured wireless access point!

The adapter allows you to connect to other wireless devices and allows you to create a wireless network. Wired and wireless networks can be interconnected with the Wireless G USB Mini Adapter, giving you all the benefits of your wired network to your wireless clients.

1.2 Package Contents

When you receive your *Corinex Wireless G USB Mini Adapter*, check to be sure that the package contains:

- *Corinex Wireless G USB Mini Adapter*
- Installation CD with drivers and documentation
- Printed Quick Start Guide

1.3 Features

- Supports Microsoft Windows 98SE, ME, 2000 and XP
- Operating distance of up to 300 meters in free space
- 54/48/36/24/18/12/11/9/6/5.5/2/1 Mbps selectable Data Rate
- Supports USB 2.0 interface
- Access Point or Station mode
- 64/128/256-bit WEP (Wired Equivalent Privacy), TKIP and AES encryption
- Open System, Shared Key, WPA, WPA PSK, WPA2 and WPA2 PSK Authentication
- 2.400GHz ~ 2.4835GHz unlicensed ISM Frequency Band
- Modulation Method:
 - IEEE 802.11b: DSSS (Direct Sequence Spread Spectrum)
 - IEEE 802.11g: OFDM (Orthogonal Frequency Division Multiplexing)
- Easy operation and setup

1.4 System Requirements

- Windows 98SE / ME / 2000 / XP
- One available USB 1.1 or 2.0 port

2 Using the Corinex Wireless G USB Mini Adapter

2.1 Overview

Thank you for purchasing the *Corinex Wireless G USB Mini Adapter*!

The *Corinex Wireless G USB Mini Adapter* is an easy-to-install wireless adapter, compliant with both 802.11b and 802.11g wireless standards, allowing your computer to communicate with other wireless networking devices or wireless networks. Additionally, it can act as a wireless access point, allowing wireless clients to connect to your computer, and furthermore, to any wired network to which your PC is connected.

The *Corinex Wireless G USB Mini Adapter* supports both USB 1.1 and 2.0 standards. The only difference is the maximum data rate. When connected to a USB 1.1 port, the USB Mini Adapter behaves as an 802.11b client/access point, allowing data rates of up to 11 Mbps. When connected to a USB 2.0 port, it provides the full capabilities of an 802.11g wireless device, allowing speeds of up to 54 Mbps. The adapter comes with a convenient configuration utility, allowing fast and easy setup of all parameters and functions.

2.2 Installation

The *Corinex Wireless G USB Mini Adapter* requires installation of the drivers and the configuration utility in order to be detected by the operating system. Please follow the steps below in order to successfully install the *Corinex Wireless G USB Mini Adapter* drivers.

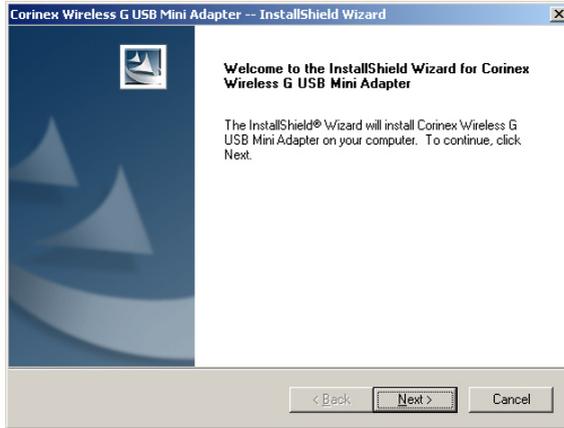
NOTE: Please don't connect the *Corinex Wireless G USB Mini Adapter* to your PC before step 4.

Step 1

Insert the included CD into your CD-ROM drive. The installer should start automatically. If it does not, please navigate to the root folder of the CD by clicking on **My Computer** and then on the **Compact Disc** icon, and execute the file **setup.exe**. The following screen will appear.



Please wait until the InstallShield Wizard starts completely and the welcome screen appears.

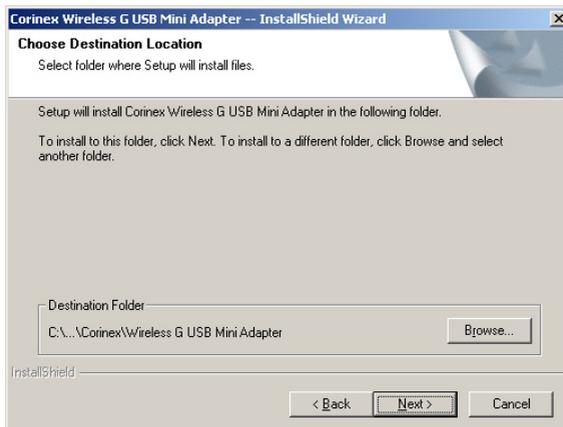


10

Proceed by clicking the **Next** button.

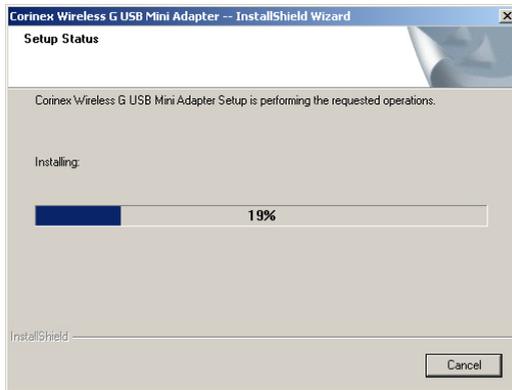
Step 2

On the next screen, you may select where to install the utility for configuration of the *Corinex Wireless G USB Mini Adapter*. If you are satisfied with the default setting, click **Next**. Otherwise, click **Browse** to select the path manually and confirm your choice by clicking **Next**.



Step 3

The installer will now install the drivers in your system and copy all the necessary files to the specified folder.



Please wait until the files are copied. The following screen will appear.



In Windows XP, shortly after this screen appears, you may encounter a system warning saying that the software has not passed Windows Logo testing. Please accept this warning by clicking **Continue anyway**.

Finally, click **Finish** to close the installation wizard.

Step 4

Now you can connect the *Corinex Wireless G USB Mini Adapter* to your computer. Windows will detect a new device and start the installation. Please wait until the installation is finished. In Windows XP, during the installation, you will encounter a system warning saying that the software has not passed Windows Logo testing. Please accept this warning by clicking **Continue anyway** and proceed the installation.

Your *Corinex Wireless G USB Mini Adapter* is now ready to use. Please see the next chapter on how to set up your wireless network parameters.

3 Configuration

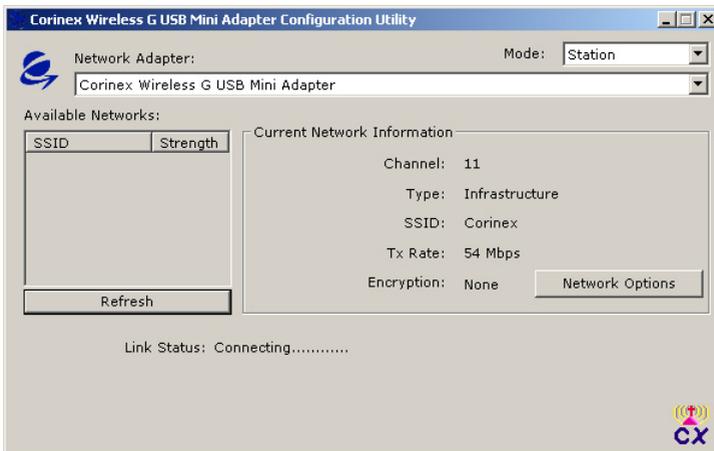
The *Corinex Wireless G USB Mini Adapter* comes with a configuration utility, which is installed together with the drivers. As soon as you plug the *Corinex Wireless G USB Mini Adapter* into the USB port on your PC, the utility will start and you will see its icon in the system tray.



You can double-click on the icon at anytime to bring the configuration window to the foreground and check or change the settings.

If the utility doesn't start automatically after connecting the *Corinex Wireless G USB Mini Adapter* to your computer, you can start it manually from the **Start** menu. It can be found in the **Programs** folder of the **Start** menu, under the subfolder **Corinex** -> **Corinex Wireless USB Mini Adapter**.

After starting the configuration utility, the following screen opens:



The **Network Adapter** field shows the name of the currently configured network adapter. By default, it shows the *Corinex Wireless G USB Mini Adapter*. It is not recommended to change the default name of the adapter.

In the top right corner of the window, you can see the current operation mode of the *Corinex Wireless G USB Mini Adapter*. Both modes are described in the table below.

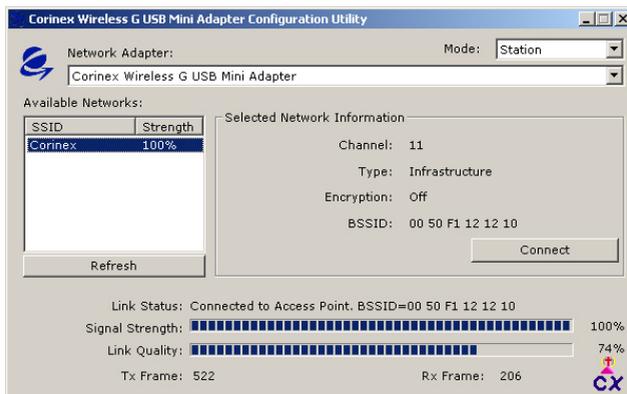
Mode	Description
Station	The <i>Corinex Wireless G USB Mini Adapter</i> works as a wireless client. It has to be connected to an access point in order to connect the computer to a network.
Access Point	The <i>Corinex Wireless G USB Mini Adapter</i> works as an access point and provides networking services for wireless clients. In this mode, you can bridge the wireless network with another network, for example with your Ethernet connection, so that the wireless clients are able to access the network.

The configuration options and the look of the configuration utility depend on the operating mode. Please see the next chapters for detailed information on both modes.

3.1 Station Mode

By default, the *Corinex Wireless G USB Mini Adapter* comes in the station mode and tries to find a wireless access point. It scans all channels for a response. As soon as it finds an access point, it displays its SSID and signal strength in the table **Available Networks**.

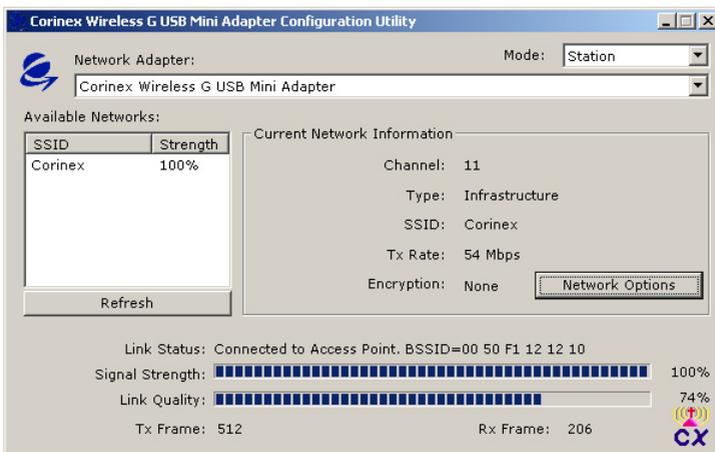
You can scan for all available access points by clicking on the **Refresh** button. The *Corinex Wireless G USB Mini Adapter* scans all available channels and reports the results in the **Available Networks** window.



After an access point is selected from the list, its parameters are displayed in the **Selected Network Information** section, next to the list of access points. The following information is displayed:

Field	Description
Channel	Displays the operating channel of the selected access point.
Type	Displays the type of network: Infrastructure – the clients communicate with each other using an access point. The access point can be connected to a wired network in order to provide connectivity to the internet, to shared items on a network, and printers. Ad-Hoc – the clients communicate with each other directly.
Encrypt	Indicates type of encryption used by the access point.
BSSID	MAC address of the access point.

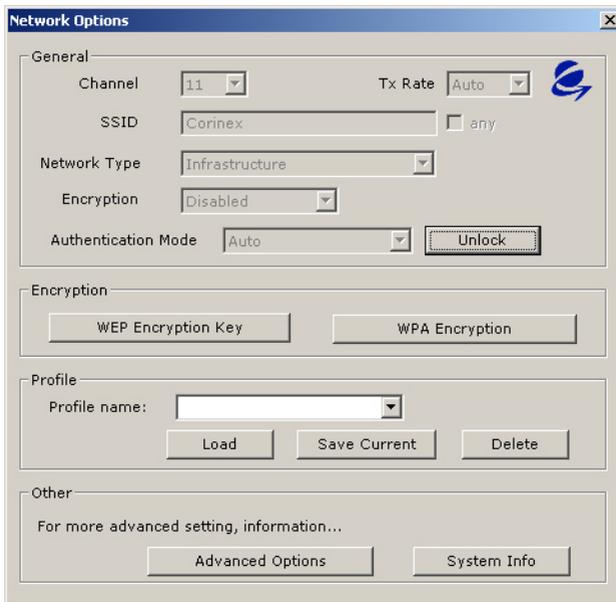
When you click on the **Connect** button, the *Corinex Wireless G USB Mini Adapter* will try to connect to the selected access point. After successful connection to the access point, the window changes to show information about the connection status.



Field	Description
Channel	Channel being used for communication
Type	Type of connection, having the values Infrastructure or Ad-Hoc
SSID	Identification of the network
Tx Rate	Maximum data rate
Encrypt	Type of encryption used
Link Status	Shows the MAC address of the connected access point
Signal Strength	Signal strength, given as a percentage
Link Quality	Quality of the link between the <i>Corinex Wireless USB Mini Adapter</i> and the access point, given as a percentage of the current data rate
Tx Frame	Number of frames transmitted per second
Rx Frame	Number of frames received per second

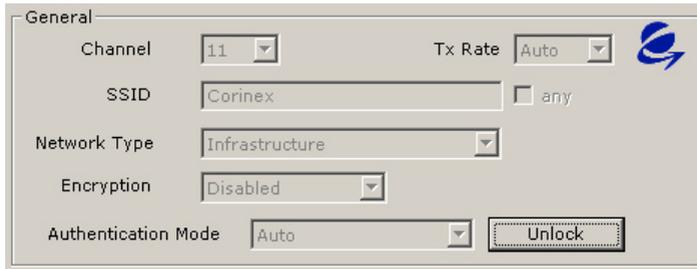
If you want to set up or adjust the network parameters manually, please click on the **Network Options** button. The following window will appear.

15



This window is divided into four sections – **General**, **Encryption**, **Profile** and **Other**.

3.1.1 General



This section shows the general wireless settings of the current connection. If you want to change anything, click on the button **Unlock**. All fields, which can be changed, will be enabled. Please see the following table for explanations of the fields and their options.

Field	Description
Channel	Current channel. This field cannot be changed if the <i>Corinex Wireless G USB Mini Adapter</i> operates in the infrastructure mode and is connected to an access point. Depending on the country, you may not be able to use all channels. Please see the section Other for details on the usage of channels.
Tx Rate	Transmit data rate. This can be set to Auto , allowing the <i>Corinex Wireless G USB Mini Adapter</i> to negotiate the data rate automatically with the access point. If you prefer manual setting, you can select any rate from 1 Mbps up to 54 Mbps.
SSID	Identification of the network. Only two devices which have the same SSID can communicate with each other. You can enable the checkbox “ any ”, and this will force the <i>Corinex Wireless G USB Mini Adapter</i> to connect to any access point it finds, choosing the best signal strength and link quality.
Network Type	Infrastructure – the clients communicate with each other using an access point. The access point can be connected to a wired network, in order to provide connectivity to the Internet, to shared items on a network, and printers. Ad-Hoc – the clients communicate directly with each other.

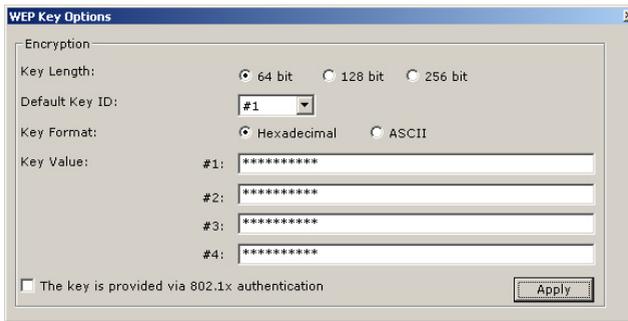
Field	Description
Encryption	<p>In infrastructure mode:</p> <p>Disable – the communication is not encrypted.</p> <p>WEP – the communication is encrypted using 64/128/256 bit WEP.</p> <p>TKIP – replaces WEP with a stronger encryption algorithm. The passwords change dynamically, and the change is synchronized between the access point and the wireless client.</p> <p>AES – another encryption method, more secure than WEP.</p> <p>In ad-hoc mode:</p> <p>Enable WEP – encryption is enabled.</p> <p>Disable WEP – encryption is disabled.</p>
Authentication Mode	<p>The following authentication modes are available:</p> <p>Open System - the simplest authentication method. The client sends out a request and the access point authenticates it. There is no encryption.</p> <p>Shared Key – this method uses a WEP encrypted password for authentication. The client will be authenticated by the access point only if the passwords match.</p> <p>Auto – in this mode, the access point provides the method for authentication and the client uses the offered method, if available.</p> <p>In the infrastructure mode, two more modes are available:</p> <p>WPA – uses a combination of Open System and 802.1x authentication. First the wireless client authenticates with the access point, then performs user-level authentication with 802.1x.</p> <p>WPA PSK - a WPA pre-shared-key mode, which doesn't require 802.1x authentication. The authentication in this mode is based on shared secrets, stored both on the access point and on the wireless client.</p> <p>WPA2 and WPA2 PSK – second generation of the Wi-Fi Protected Access based on the final IEEE 802.11i amendment to the 802.11 standard.</p>

3.1.2 Encryption Options

Wireless networks with only the default configuration are very vulnerable. Anyone with a wireless card can connect to your network and use its services if the network is not secure. The *Corinex Wireless G USB Mini Adapter* supports all common kinds of encryption algorithms.

WEP Encryption Key

If you have enabled WEP encryption, after clicking on **WEP Encryption Key**, you can change the WEP settings. The following window will appear.



Click **Unlock** to enable the fields to be changed. Please see the following table for details on each setting.

Setting	Description
Key Length	You can select 64, 128 or 256 bit encryption.
Default Key ID	Indicates which of the four keys will be used by default.
Key Format	You can choose whether you want to enter the WEP keys in hexadecimal (0-9, A-F) or ASCII format (characters, case sensitive).
Key Value 1-4	The four encryption keys. The keys are coded on-screen as asterisks (*).
The key is provided via 802.1x authentication	The WEP key will be acquired automatically from the server after successful 802.1x authentication.

The next table shows the required lengths of the keys, depending on the **Key Length** setting.

Key Length	Length in hexadecimal format	Length in ASCII format
64 bit	10	5
128 bit	26	13
256 bit	58	29

After setting all the parameters, please click **Apply** to save the settings and close the window by clicking the **x** button which is located in the top right corner of the window.

WPA Encryption

If you selected WPA for authentication, you can set the WPA parameters by clicking the **WPA Encryption** button. The following window will appear.



19

Click the **Unlock** button to enable editing of the WPA settings.

Connect Information

You can select the protocol used for authentication. Please see the following table for details on each choice.

Protocol	Description
TLS	TLS authenticates the station with the access point by exchanging digital certificates. In EAP-TLS, certificates are used to provide authentication in both directions. The server presents a certificate to the client, and, after validating the server's certificate, the client presents a client certificate to the server. No username or password is required.
PEAP	PEAP authenticates wireless LAN clients using only server-side digital certificates by creating an encrypted SSL/TLS tunnel between the client and the authentication server. The tunnel then protects the subsequent user authentication exchange. Username and password are required.

Pre-Shared Key

In this section you can enter the WPA pre-shared key which will be used for authentication. This key must be between 8 and 64 characters long.

Certificate

From the list, you can select the digital certificate used for authentication with the server.

NOTE: If there are no certificates available, please contact your network administrator in order to get digital certificates needed to authenticate with the server.

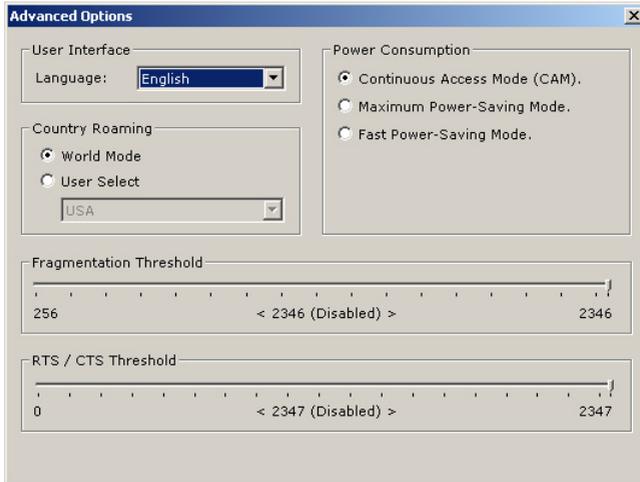
3.1.3 Profile

For users who often change their wireless settings, profiles can be created with different connection and encryption settings so you don't have to set everything manually every time you want to connect to a different access point or change the security settings.

You can enter the name of the profile into the **Profile Name** field and click on the button **Save Current**. The new profile with the current wireless settings will be created and will appear in the list of profiles. If you want to load the saved profile, select it from the list and click on the button **Load**. If you want to delete a profile, select it from the list and click on **Delete**.

3.1.4 Other

If you want to modify the application's settings or change the network settings for the *Corinex Wireless G USB Mini Adapter*, please click on **Advanced**. The following window will appear.



The advanced configuration contains the following sections.

User Interface

Here you can select the language of the configuration utility. You can choose between **English**, **German**, **Spanish**, **French**, **Swedish** and **Traditional Chinese**. The changes are applied immediately.

Country Roaming

In some countries, not all channels can be used for wireless communication, due to frequency conflicts with military communications or other systems. This is defined by regulatory domains in the respective countries. In this section, you can select the region or country where you will be using the *Corinex Wireless G USB Mini Adapter* from the list. **World Mode** enables the first 11 channels, a more general setting which will be compatible with wireless regulatory requirements in most countries. Choose this setting if your country does not appear in the drop-down list. If your country does appear in the **User select** list, check the button and select your country, which will ensure that you're operating within the frequency range allowed in your country. The following table shows the available channels in certain countries.

Channel Identifier	Center Frequency (MHz)	Regulatory Domains					
		Japan	ETSI (most of Europe)	North America	Israel	France	Mexico
1	2412	✓	✓	✓			
2	2417	✓	✓	✓			
3	2422	✓	✓	✓	✓		
4	2427	✓	✓	✓	✓		
5	2432	✓	✓	✓	✓		
6	2437	✓	✓	✓	✓		
7	2442	✓	✓	✓	✓		
8	2447	✓	✓	✓	✓		
9	2452	✓	✓	✓	✓		
10	2457	✓	✓	✓		✓	✓
11	2462	✓	✓	✓		✓	✓
12	2467	✓	✓			✓	
13	2472	✓	✓			✓	
14	2484	✓					

Power Consumption Settings

The *Corinex Wireless G USB Mini Adapter* draws its power from your computer, directly through the USB port. If you're using a laptop running on battery power, you may want to save energy by switching the *Corinex Wireless G USB Mini Adapter* to one of the power saving modes. The output power will decrease, but it will extend the running time of your battery. You can select between the following modes:

Power consumption mode	Description
Continuous Access Mode (CAM)	Consumes maximum power, provides maximum performance
Maximum Power-Saving Mode	Switches to power saving mode, provides the least performance
Fast Power-Saving Mode	The <i>Corinex Wireless G USB Mini Adapter</i> will switch between the two above modes, depending on the amount of data sent or received.

Fragmentation Threshold

In case of interference in the wireless channel, or weak signal, the *Corinex Wireless G USB Mini Adapter* can fragment frames to optimize performance. It will divide the frames into smaller pieces and send them separately to the destination device. Only data packets are fragmented - the broadcast and multicast packets are transmitted unchanged.

The threshold value is the maximum size of an unfragmented packet. Any frame larger than that threshold will be fragmented. If there are no packet losses in the wireless media, the value should be unchanged. If you experience collisions, try to lower the threshold to approx. 1000 bytes. If the network performs well at this setting, you can try higher values until you find the optimal performance.

The default value of the threshold is 2346 bytes.

RTS / CTS Threshold

The 802.11 standard includes the RTS/CTS (Request to Send/Clear to Send) function to control access of the wireless stations to the wireless medium. If two wireless stations are transmitting packets to the access point at the same time, the access point will not be able to handle both, and one of the stations will have to repeat the transmission.

If the RTS/CTS function is enabled, the station will initiate a handshake with the destination device (access point). After the access point finishes all pending operations, it confirms that the station can send the packet. This improves performance by avoiding repeat transmissions of the same data.

The threshold value is the maximum size of a packet which can be sent without activating the RTS/CTS handshake. Sending a packet with a size larger than the threshold value will activate the RTS/CTS handshake before transmission can begin.

Since the RTS/CTS function is only initiated on the client side, these settings can be ignored while the *Corinex Wireless G USB Mini Adapter* is set to **Access Point** mode.

By default, the RTS/CTS function is disabled – the threshold is set to 2347 bytes.

Information

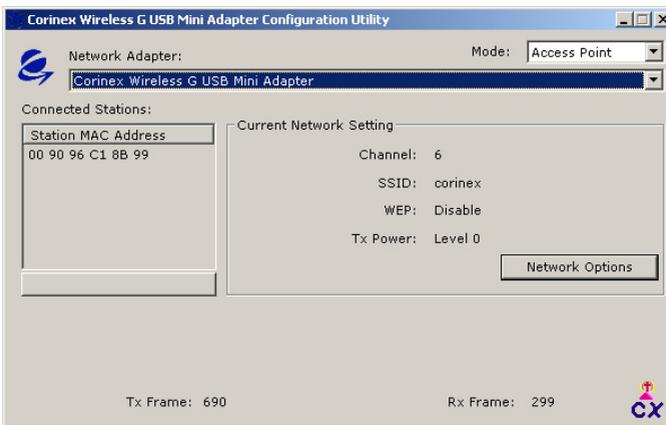
If you want to check the version number of the *Corinex Wireless G USB Mini Adapter*'s driver, version of the configuration utility or the MAC address of the *Corinex Wireless G USB Mini Adapter*, you can click the button **Information**, and a window with all this information will open.



3.2 Access Point Mode

The *Corinex Wireless G USB Mini Adapter* can operate in access point mode as well. An access point is a device which connects wireless devices together, and can optionally provide connection to a wired network in order to provide further services to wireless clients, such as Internet connection or file sharing.

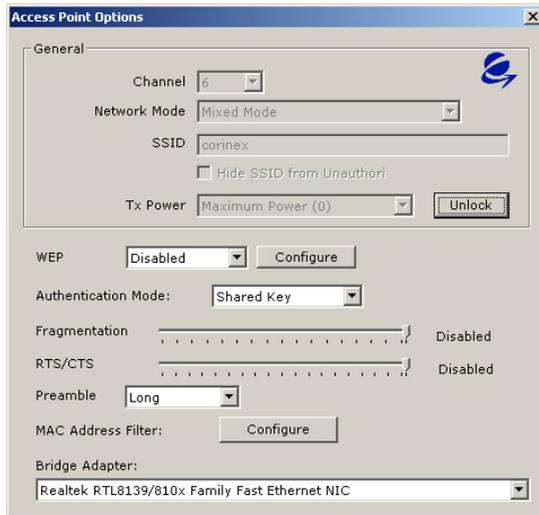
If you want to switch your *Corinex Wireless G USB Mini Adapter* to access point mode, go to the main screen of the configuration utility and select **Access Point** from the **Mode** list in the upper right corner of the window. The *Corinex Wireless G USB Mini Adapter* will be switched to access point mode immediately and the window will show the basic information as follows:



NOTE: In the picture shown above, the access point operates on channel 11, its SSID is Corinex, it uses no encryption, and it transmits with maximum power. There is a station associated with the access point, at MAC address 00:0F:66:96:40:04.

In the section **Connect Station List**, you will see the MAC addresses of all wireless stations connected to your access point.

For further configuration, please click on **Options**. The following window will appear.



25

3.2.1 General Connection Settings

In this section, after clicking on **Unlock** you can configure the basic connection settings for the access point. Please see the following table for details on each option.

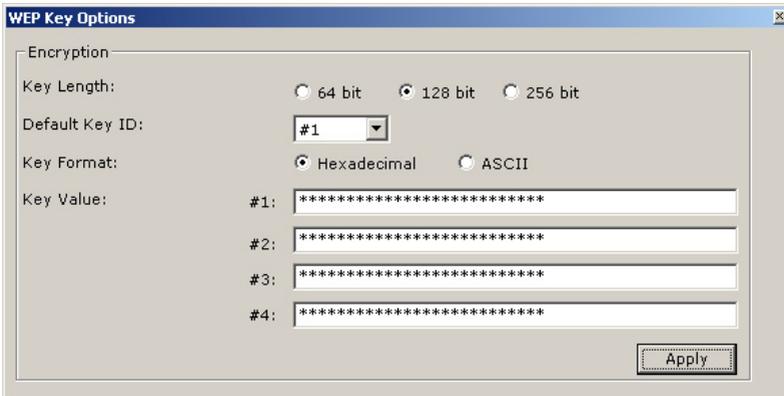
Setting	Description
Channel	Operating channel of the access point.
Network Mode	The following options are available: Mixed Mode – both 802.11b and 802.11g compatible devices can connect to this access point. 802.11b only – only 802.11b devices can connect to this access point. 802.11g only - only 802.11g devices can connect to this access point.

Setting	Description
SSID	This is the identification of your wireless access point.
Hide SSID	If you don't want to announce the presence of your wireless access point to the world, click this checkbox.
TX Power	You can switch between four transmission power levels. Value 0 means maximum output power, value 3 means minimum power. This setting will reduce the effective range of your access point.

Click **Apply** to save your changes.

3.2.2 WEP

The communication between the access point and the wireless clients can be encrypted with 64-bit, 128-bit or 256-bit strong WEP encryption. Selecting an option from the list, you can either disable WEP, or set one of the three WEP encryptions. To set-up parameters for WEP, click on **WEP Key**. The following window will appear.



Click **Unlock** to enable changes to be made. Please see the following table for details on each setting.

Setting	Description
Key Length	You can select 64-, 128- or 256-bit encryption.
Default Key ID	Indicates, which of the four keys will be used by default.
Key Format	You can choose whether you want to enter the WEP keys in hexadecimal (0-9, A-F) or ASCII format (characters, case sensitive).
Key Value 1-4	The four encryption keys. Characters display as asterisks on-screen (*).

The next table lists the required lengths of the different keys, depending on the **Key Length** setting.

Key Length	Length in hexadecimal format	Length in ASCII format
64-bit	10	5
128-bit	26	13
256-bit	58	29

After setting all the parameters, please click **Apply** to save the settings and close the window by clicking the **x** button located in the top right corner of the window.

3.2.3 Authentication Mode

For the authentication of wireless clients on the access point, you can select between **Open System** and **Shared Key** authentication. Please see the following table for details:

Authentication Type	Description
Open System	The simplest authentication method. The client sends out a request and the access point authenticates it. There is no encryption.
Shared Key	This method uses a WEP-encrypted password for authentication. The client is authenticated by the access point only if the passwords match.

NOTE: For **Shared Key** authentication details, please see the description of the WEP settings above.

3.2.4 Fragmentation Threshold

In case of interference in the wireless channel, or weak coverage, the *Corinex Wireless G USB Mini Adapter* can fragment frames to optimize performance. It will divide the frames into smaller pieces and send them separately to the recipient. Only data packets are fragmented, the broadcast and multicast packets are transmitted unchanged.

The threshold value means the maximum size of an unfragmented packet. Any frame larger than that threshold will be fragmented. If there are no packet losses in the wireless media, the value should be unchanged. If you experience collisions, try to lower the threshold to approx. 1000 bytes. If the network performs well at this setting, you can try higher values until you find the optimal performance.

The default value of the threshold is 2346 bytes.

3.2.5 RTS/CTS

The 802.11 standard includes the RTS/CTS (Request to Send/Clear to Send) function to control access of the wireless stations to the wireless medium. If two wireless stations are transmitting packets to the access point at the same time, the access point will not be able to handle both, and one of the stations will have to repeat the transmission.

If the RTS/CTS function is enabled, the station will initiate a handshake with the destination device (access point). After the access point finishes all pending operations, it confirms that the station can send the packet. This improves performance by avoiding repeat transmissions of the same data.

The threshold value is the maximum size of a packet which can be sent without activating the RTS/CTS handshake. Sending a packet with a size larger than the threshold value will activate the RTS/CTS handshake before transmission can begin.

Since the RTS/CTS function is only initiated on the client side, these settings can be ignored while the *Corinex Wireless G USB Mini Adapter* is set to **Access Point** mode.

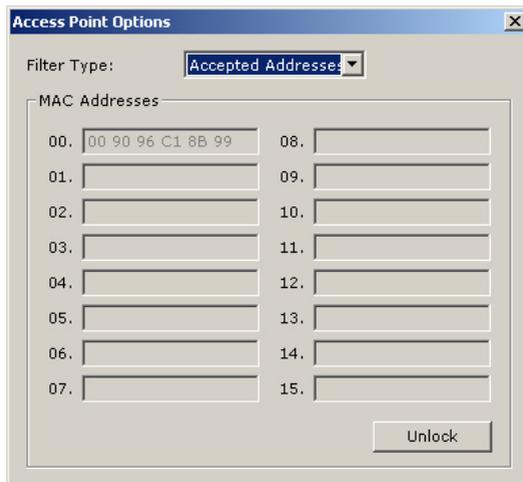
By default, the RTS/CTS function is disabled– the threshold is set to 2347 bytes.

3.2.6 Preamble

If all wireless clients and access points in your wireless network support **Short Preamble**, then enabling it can enhance the performance. However, if any wireless device does not support **Short Preamble**, then it will not be able to communicate with your network. **Long Preamble** is the default setting and allows connection to all wireless devices.

3.2.7 MAC Address Filter

In the access point mode, you can either allow or block specific wireless clients from connecting to the access point. A typical example application of the MAC Address Filter would be to allow only your home wireless devices to connect to your access point and share the Internet connection. If you want to set up the MAC Address Filter, please click the **Options** button next to the **MAC Address Filter** label. The following window will appear.



29

Click **Unlock** to enable changes to be made.

From the **Filter Type** list, you can select three options which are described in the table below.

Mode	Description
Disabled	The MAC Address filter is disabled - all clients can access your network.
Accept	Only wireless clients at the specified MAC Addresses can access your network. No other wireless clients can connect to your access point
Reject	Wireless clients at the specified MAC addresses are blocked from accessing your network. Any and all other wireless clients can connect.

If you select the **Accept** or **Reject** mode, enter the MAC addresses you wish to allow or block. Each MAC address has to be entered as a 12 hexadecimal number without any delimiters (no commas, colons, spaces, etc.).

After setting up the **MAC Address Filter**, please click on **Apply** and close the window.

3.2.8 Bridge Adapter

In access point mode, you may want to provide additional connection possibilities for the wireless clients. Because the *Corinex Wireless G USB Mini Adapter* doesn't have an Ethernet port, and is connected directly to your PC, you may want to set up bridging between the wireless connection and some other network card.

For example, if your computer has an Ethernet connection providing Internet to your PC, you can bridge the wireless connection with your Ethernet card, so that wireless clients will get access to your Internet connection. In order to do this, select your Ethernet card from the list of network adapters, as shown in the example below.



The wireless clients will get full access to your Internet connection, they can use the services provided by DHCP servers in the wired network, and will gain access to shared resources and devices, such as network printers.

4 Troubleshooting

Problem	Solution
The computer doesn't recognize the <i>Corinex Wireless G USB Mini Adapter</i> .	Make sure the drivers have been installed from the CD. Please refer to this user guide in order to successfully install the <i>Corinex Wireless G USB Mini Adapter</i> with your system.
The LED on the <i>Corinex Wireless G USB Mini Adapter</i> is off.	Make sure the <i>Corinex Wireless G USB Mini Adapter</i> is inserted properly into the USB port of your PC and that the drivers are correctly installed.
The LED is always on, not blinking.	Make sure the drivers have been installed from the CD.
The LED is blinking but the <i>Corinex Wireless G USB Mini Adapter</i> icon does not appear in the system tray.	Make sure the Configuration Utility has been installed from the CD.
I'm seeing very poor network performance.	Try selecting another channel for communications or moving your device physically closer to the Access Point.
I cannot connect to an access point.	Make sure that you have set the network type to Infrastructure mode, you have the correct SSID, exactly the same as the SSID at the access point. If encryption is on at the access point, set the same password and other options on your <i>Corinex Wireless G USB Mini Adapter</i> .
I can connect to the access point, but not to the Internet.	Please check to see if encryption is on at the access point. Set your <i>Corinex Wireless G USB Mini Adapter</i> encryption settings exactly the same as those at the access point.
I cannot connect directly to another wireless device.	Make sure you have set your <i>Corinex Wireless G USB Mini Adapter</i> to Ad-Hoc mode and that you have correct SSID and other settings.

5 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 (wireless local area network) 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 - a method in which IP addresses are assigned by the 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 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.

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.

IGateway

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 a central database, or wireless applications for mobile workers.

ISM Band

The FCC and their counterparts outside 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 communication 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 points are deployed, PCs can always be connected, regardless of where they are located.

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.

Temporal Key Integrity Protocol (TKIP)

The Temporal Key Integrity Protocol, pronounced tee-kip, is part of the IEEE 802.11i encryption standard for wireless LANs. TKIP is the next generation of WEP, the Wired Equivalency Protocol, which is used to secure 802.11 wireless LANs. TKIP provides per-packet key mixing, a message integrity check and a re-keying mechanism, thus fixing the flaws of WEP.

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 packets are sequenced for transmission across the network. The term “TCP/IP” is often used generically to refer to the entire suite of related protocols.

Transmit / Receive

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

Wi-Fi Alliance

The Wi-Fi Alliance is a nonprofit international association formed in 1999 to certify interoperability of wireless Local Area Network products based on IEEE 802.11 specification. The goal of the Wi-Fi Alliance’s members is to enhance the user experience through product interoperability. The organization was formerly known as WECA.

Wi-Fi Protected Access (WPA)

The Wi-Fi Alliance put together WPA as a data encryption method for 802.11 wireless LANs. WPA is an industry-supported, pre-standard version of 802.11i, utilizing the Temporal Key Integrity Protocol (TKIP), which fixes the problems of WEP, including using dynamic keys.

Wide Area Network (WAN)

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

Wired Equivalent Privacy (WEP)

Now widely recognized as flawed, WEP is a data encryption method used to protect the transmission between 802.11 wireless clients and APs. However, it uses the same key among all communicating devices. WEP's problems are well-known, including an insufficient key length and no automated method for distributing the keys. WEP can be easily cracked in a couple of hours with off-the-shelf tools.

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 commonly used types of wireless transmission. Most wireless LANs use spread spectrum technology. It offers limited bandwidth, usually under 11Mbps, and users share the bandwidth with other devices in the spectrum; however, users can operate a spread spectrum device without licensing from.