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Introduction

Welcome to Avaya Wireless LAN, the easy way to wireless computing. Building your wireless network has never been easier.

This book introduces you to the Avaya USB Client, and will help you to connect to your network in a snap. It describes the most common configurations.

To install and manage wireless products, it is assumed that you have a working knowledge of installation procedures for network operating systems under Microsoft Windows.

Wireless LAN Network Scenarios

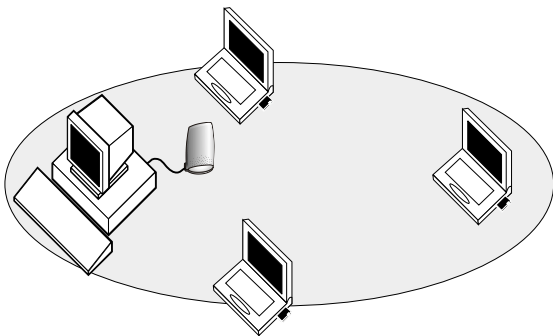
The USB Client Kit enables you to:

- Connect your computer to a Peer-to-Peer workgroup of wireless computing devices (see Figure 1-1 on page 1-3).
- Connect your computer to a Local Area Network (LAN) Infrastructure that includes Avaya Wireless LAN access points, or other IEEE 802.11 compliant LAN systems (see Figure 1-2 on page 1-4).

Wireless stations can be equipped with the USB Client, but also with Avaya Wireless PC Card or PCI Adapter. All Wireless LAN adapters share the same wireless functionality.

Peer-to-Peer Workgroup

The Peer-to-Peer workgroup configuration enables you to quickly set up a small wireless workgroup, where the workgroup participants can exchange files using features like “File and Printer Sharing” as supported by Microsoft Networking.

Figure 1-1 Peer-to-Peer Wireless Workgroup

You can use this option to setup a temporary or ad-hoc network in environments where no access points are available (for example in Small Office/Home Office (SOHO) environments).

As long as the stations are within range of one another, this is the easiest and least expensive way to set up a wireless network.

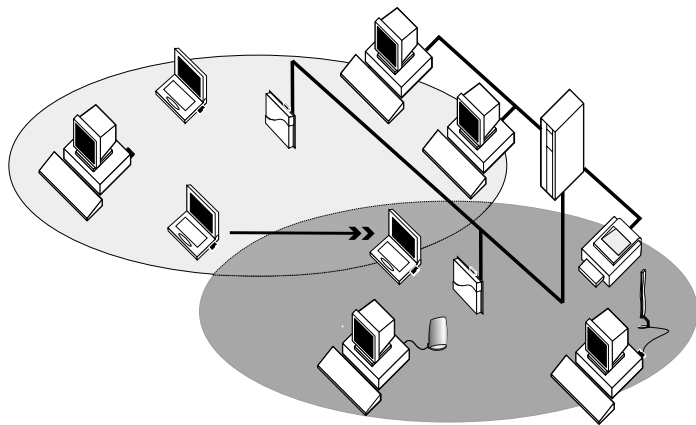
Enterprise Networking

With the Wireless LAN access point you can connect to a corporate Local Area Network (LAN) infrastructure to have wireless access to all network facilities.

LAN Infrastructures may either be:

- Stand-alone wireless LANs.
- Wireless network infrastructures connected to an existing Ethernet network as pictured in Figure 1-2.

Figure 1-2 LAN Infrastructure



It's Easy

The USB Client functions like any standard wired Ethernet card, but does not need any wires!

Where an Ethernet card requires a cable connection to a hub and/or patch panel, the cable physically ties you down to the location of the wired connection.

Wireless LAN allows you to connect your computer to a Local Area Network (LAN) system from anywhere within the wireless coverage area. Expanding or re-designing your network is easy: Add or relocate access points and/or Residential Gateway-Is, power-up your wireless computers, and you're done!

Unlike Ethernet, wireless client adapters and access points will enable you to roam throughout the network while remaining connected to the LAN.



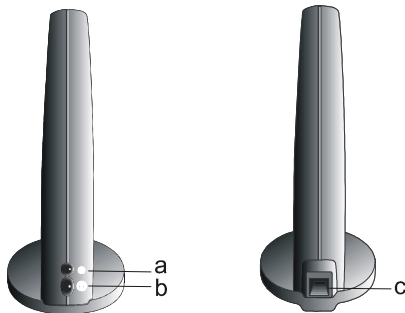
NOTE:

The USB Client is a radio product. Refer to the flyer "Information to the User" for regulatory information that may apply in your country.

USB Client Features

The USB Client is a wireless network device that is connected through the USB cable to any standard USB connector.

Figure 1-3 USB Client LEDs and Connector



- a. Power ON/OFF LED.
- b. Radio LED.
 - Off - No wireless activity.
 - Blinking - Sensing/transmitting wireless data.
 - Solid Green - standard operational mode.
- c. USB Connector.

The USB Client is:

- Wi-Fi (Wireless Fidelity) certified by the Wireless Ethernet Compatibility Alliance (WECA). This means that your Wireless LAN hardware will communicate with other vendors' IEEE 802.11 compliant wireless LAN products.
- Fully compatible with any other wireless LAN system based on Direct Sequence Spread Spectrum (DSSS) radio technology that complies with the "IEEE 802.11 standard on wireless LANs (Revision B)".
- Compatible with the Universal Serial Bus revision 1.1. specification (Sept. 23, 1998).



The USB Client supports the following wireless LAN features:

- Automatic Transmit Rate Select mechanism in the transmit range of 11, 5.5, 2 and 1 Bit/s.
- Automatic Frequency Channel Selection (2.4 GHz) allowing roaming over multiple channels.
- Power Management.

About the CD-ROM

The CD-ROM contains both software and documentation for the USB Client. If you wish to install the drivers and software, turn to “Install your USB Client” on page 2-1.



NOTE:

Prior to copying or installing the software, you are advised to read the Software License Agreement “**LICENSE.TXT**”, located in the root folder of the CD-ROM. By installing, copying or using the software, you are consenting to be bound by this agreement. Do not download, copy or install it, if you do not agree to all of the terms of the Software License Agreement.

It is the policy of Avaya to improve products as new technology, components, software and firmware become available.

Before you proceed with the installation, we recommend you to consult our website at: **<http://www.avaya.com>** to:

- Verify if newer versions of the software that was shipped with your product are available.
- Download and install the latest software with your purchased product.

Quick Overview

This chapter describes the installation of the USB Client for Microsoft Windows 98, ME and 2000.

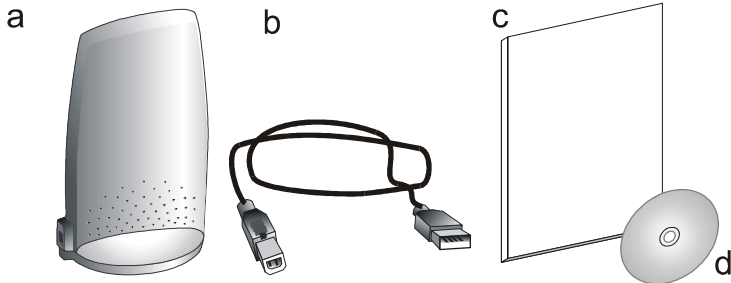
To install your USB Client:

1. Verify kit contents (see page 2-2).
2. Insert the CD-ROM and install the Client Manager Software (see page 2-3).
3. Connect your USB Client to your computer (see page 2-4).
4. Follow the instructions on the screen to install drivers (see page 2-5).
5. Set Windows Network Properties (see page 2-7)
This step is only required if this is the first time you are installing a network adapter on your computer.
6. Set Wireless LAN properties to connect to the wireless network (see page 2-9).
7. Finish installation: Specify drive and directory of the software and restart your system (see page 2-15).

Verify Kit Contents

Unpack your USB Client kit and verify that all items are present.

Figure 2-1 Kit Contents



- a. One USB Client.
- b. One USB Cable.
- c. One “WL215 Wireless USB Getting Started Guide” (this document).
- d. One CD-ROM containing drivers, software and electronic documentation.

If any of the items described appear to be damaged or missing, please contact your supplier.

Install the Client Manager Software

The Client Manager program is a software tool that you can use to check the quality of your network connection.



NOTE:

It is not mandatory to install the Client Manager program in order to establish a network connection, but it provides you with more options to:

- View/modify the settings of your network connection.
- Monitor your network connection.

To install the Client Manager software, proceed as follows:

1. Insert the CD-ROM that came with your USB Client kit into your computer.
2. Select **Install Client Manager**.
3. Follow the instructions on your screen.



NOTE:

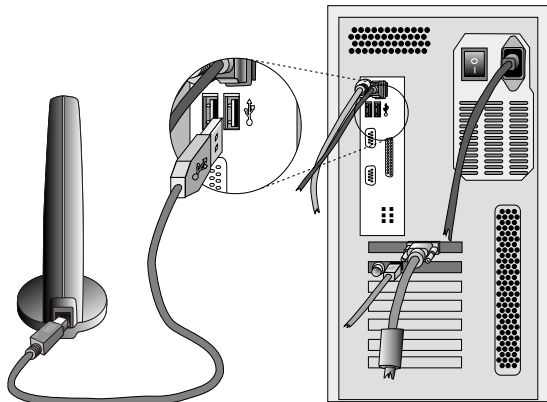
If the CD-ROM does not start automatically:

1. Open Windows Explorer
2. Navigate to the CD-ROM drive
3. Double-click the file "**setup.exe**".

Connect your USB Client

Connect your USB Client to your computer as pictured in Figure 2-2.

Figure 2-2 Connect USB Client to Your Computer



NOTE:

Both USB slots on the PC are equivalent.

Install Drivers

Before You Start the Installation

Before you start the installation, you are advised to keep the Windows CD-ROM or software diskettes close at hand. If your computer came with a factory-installed Windows operating system, these files will be stored on your computer's hard disk, in the form of cabinet (*.cab) files.

What You Need to Know

Installing your USB Client requires the same level of expertise that you would need to install a standard Ethernet network adapter card. It is assumed that you have a working knowledge of standard Windows operations and of installing network adapter cards. Refer to the Windows Help when necessary (on the Windows Taskbar, press the **Start** button and select **Help**).

Driver Installation for Windows

To install the driver proceed as follows:

1. If Windows starts the **Add New Hardware** wizard, follow the instructions of the **New Hardware Found** wizard to install the drivers.

When you are prompted to locate the driver installation files, select the CD-ROM included with the USB Client Kit and browse to the folder that matches your operating system:

- Windows ME: D:\Drivers\Win_ME
- Windows 98: D:\Drivers\Win_98 or
- Windows 2000: D:\Drivers\Win_2000.

Where “D:” represents the drive letter of your CD-ROM drive.

When finished installing the drivers, Windows automatically opens the **Add/Edit Configuration Profile** window.

2. Continue with “Set Windows Network Properties” on page 2-7.



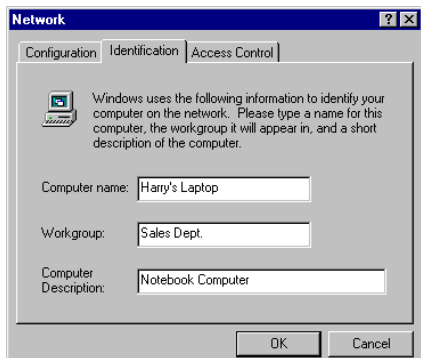
NOTE:

If your computer does not detect the new hardware consult “Troubleshooting” on page B-1.

Set Windows Network Properties

If this is the very first time that Networking support is installed onto your computer, the Windows operating system will prompt you to enter a computer and workgroup name. These names will be used to identify your computer on the Microsoft Network Neighborhood.

Figure 2-3 Windows Network Identification Properties



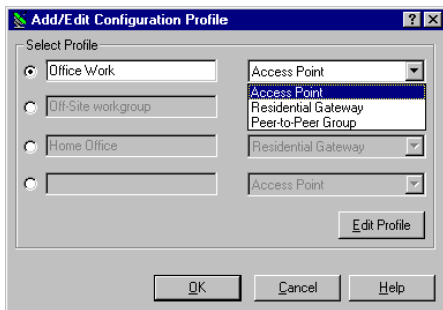
1. In the **Computer name** field, enter a unique name for your computer.
2. In the **Workgroup** field, enter the name of your workgroup.
3. (Optional) Provide a description of the computer in the **Computer Description** field.

For more information about setting your Windows Network properties, consult your Windows documentation or the Windows on-line help information.

Wireless LAN Properties

After installing the drivers, Windows will open the Add/Edit Configuration Profile window for your USB Client as pictured in Figure 2-4.

Figure 2-4 Add/Edit Configuration Profile window



Configuration Profile

The Add/Edit Configuration Profile window enables you to specify one or more network connection profiles.

For example you can set up profiles for your office, your home or an ad-hoc workgroup to share files with your colleagues or friends while being “on the road”.

For more information about the different types of networks, refer to “Network Options” on page 1-3.

To connect your computer to a wireless network you will need to:

1. Assign a name to the network profile
2. Use the pull-down menu on the right to select how you wish to connect to the wireless network:
 - Via the Access Point-I or Access Point-II to connect to the corporate network
 - Via the Residential Gateway-I, or
 - An ad-hoc peer-to-peer workgroup of wireless stations without access point.
3. Click the **Edit Profile** button to view/modify the parameters for the selected profile.

For first-time installations, you are advised to setup a single profile using only the Basic Settings.

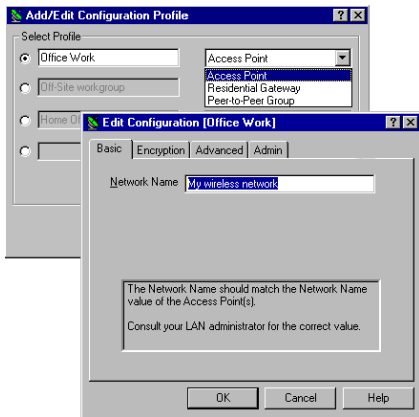


NOTE:

The number and type of parameters you need to specify may differ according to the selected connection type.

For information about the various options press the **F1** key or click the **Help** button.

For information about various options press the **F1** key or click the **Help** button.

Figure 2-5 Edit Configuration window

Basic Settings

To connect to a wireless network, all you need to specify is:

- A valid **Network Name**.
- (Optional) a valid **Encryption Key**.

Network Name

The Network Name is a case-sensitive string of alphanumeric characters in the range of “a” to “z”, “A” to “Z” and “0” to “9”. It connects you to the wireless LAN, like a cable would connect a wired computer to an Ethernet LAN.

Valid values are subject to the type of network to which you wish to connect your computer:

- To connect to a Residential Gateway-I, enter the 6-digit Network Name that is printed on a label at the bottom of the Residential Gateway-I device.
- To connect to a Peer-to-Peer workgroup, enter the name as agreed upon by the workgroup participants.

If you wish to start a workgroup yourself, enter a name with a maximum of 32 alphanumeric characters, and share that value with your workgroup participants.

This value should have a maximum of 32 alphanumeric. characters.

Alternatively you may choose to enter the value “ANY” (all character upper-case) to connect to any IEEE 802.11 compliant wireless network in the vicinity of your computer.

Proceed with the Encryption Key settings, or click **OK** to confirm and return to the Add/Edit Configuration Profile window.

Encryption Key

To enhance the security of your wireless communications, you can also choose to enable wireless data encryption.

The encryption options differ according to the selected configuration profile (page 2-9).



CAUTION:

To allow communication, all wireless devices should use identical encryption settings. As the encryption key is case-sensitive, make sure you enter it with care.

- When you selected to connect to a Residential Gateway-I, you can enter one encryption key. The default Encryption Key matches the last 5 characters of the Network Name.



CAUTION:

Do not modify this key unless you have already changed the encryption key of your Residential Gateway-I.

- When connecting to a Peer-to-Peer workgroup, enter the key as agreed upon by the workgroup participants.
- When connecting to a corporate LAN via the Access Point profile, the encryption tab allows you to enter up to four different keys in either alphanumerical or hexadecimal format.

Enter the values as defined by your LAN Administrator.



NOTE:

The keys should be entered in exactly the same order as in the access point.

Advanced Parameters

The Edit Configuration window also provides access to the advanced parameters in the Advanced and Admin tab.

You are advised to leave these parameters to their default settings, unless special situations require a change of these parameters. For a description of these parameters, consult the on-line help file or the “User’s Guide” on the CD-ROM.

Finish the Installation

When you have finished the “Wireless LAN Properties”, click the **OK** button to close the Add/Edit Configuration window and to proceed with the installation process. Windows will finish building the driver configuration database and copy some files to your computer’s hard disk.

- If the Windows operating system prompts you to identify the location of the Windows files, specify the drive and directory of the Windows Installation CD-ROM or diskettes.
 - When you had the USB Client installed on your computer before, most of these files are already available on your hard disk drive. If you do not have the Windows CD-ROM available, you may try replacing the proposed path in the Copy Files From dialog box with:
“C:\Windows\System” or **“C:\Windows\”**
 - If the Windows operating system prompts you to identify the location of the driver files (typically file names starting with the characters **“WLxx.*”** or **“WNAVxx.*”**) specify the drive and directory of the Software:
 - Windows ME: D:\Drivers\Win_ME
 - Windows 98: D:\Drivers\Win_98
 - Windows 2000: D:\Drivers\Win_2000
- If you downloaded the files from the Internet, point to the disk drive or directory where you saved files.

When Windows has finished copying of files, it will prompt you to restart your computer. Click the **Yes** button to restart your computer.

After Restarting Your Computer

To verify if the installation of the drivers was completed successfully, check the LEDs on your USB Client.



A steady green Power LED to indicate the USB Client is connected to your computer.



A flickering green Radio LED to indicate wireless activity.

For other LED behavior see “Troubleshooting” on page B-1.

(Optional) Check the quality of the wireless network connection, using the Client Manager program (see “Install the Client Manager Software” on page 2-3).

Using Wireless LAN and Windows

3

Introduction

This chapter provides general information on how to:

- Use your USB Client
- View Other Computers
- Use the Client Manager
 - View Wireless Link Quality
 - View/Modify USB Client Settings
- Find More Information

Use your USB Client

Radio Antennas

The built-in radio and antennas of your USB Client perform best in an open environment with as few obstacles as possible. To achieve the maximum range for wireless communications, do not cover the USB Client device with any objects.

Remove the USB Client

If you do not need the wireless connectivity of your USB Client, you can disconnect and remove the USB Client.



CAUTION:

When removing the USB Client you will lose your connection to the network. Prior to removing the USB Client, make sure you have closed all files and network applications (such as e-mail).

Maintenance of your USB Client

To clean the USB Client, gently wipe it with a soft (damp) cloth. To avoid damage to the USB Client do not use abrasive materials, or rinse the device with liquids.

View Other Computers

When multiple base stations are up and running in your wireless network, you can use the procedure described below to display the other computers:

1. Start Windows Explorer.
2. Scroll down the list of files and folders to look for the item **Network Neighborhood**.
3. Double-click the **Network Neighborhood** item to display all stations in your Microsoft Networking Group.
4. To display other workgroups in the network environment, double-click the **Entire Network** icon.
5. If there is a second network operating system running in your network environment (for example a Novell NetWare network), the “Entire Network” window will also display available servers running under the second network operating system.


If you click on these servers, you may be asked to enter your user name and password that applies to the other network operating system.

If you cannot find it, verify whether the other wireless computers are:

- Powered up and logged on to the network.
- Configured to operate with identical Microsoft Network settings concerning:
 - Networking Protocol.
 - Wireless Network Name.

- Workgroup Name.

To view or modify the **Station Name** or **Workgroup** of your computer, proceed as follows:

1. Click the  **Start** button from the Windows task bar.
2. Click on **Settings**, and then on **Control Panel**.
3. In the Control Panel window, double-click the **Network** icon.
4. In the Network Settings window, select the **Identification** tab to verify or change the **Station Name** or **Workgroup**.



NOTE:

You have to restart your computer before changes to the Network Settings will be effected.

To verify the radio connection with other stations refer to “View Wireless Link Quality” on page 3-5.

Use the Client Manager

If you installed the Client Manager as described in “Install the Client Manager Software” on page 2-3, you can use the Client Manager to:

- Verify the quality of your wireless connection to the network.
- View/Modify the configuration settings of your USB Client.

The Client Manager will start automatically every time you power up your computer.

The Client Manager icon is displayed in the “System Tray” of your Windows task bar at the right-side on the bottom of your screen, indicating that the Client Manager program is running.









- Click the icon once with your **left** mouse button to retrieve a more detailed status overview.
- Click the icon once with your **right** mouse button to display a menu with more options.

View Wireless Link Quality

You can use the Client Manager icon on the Windows task bar to verify the link quality of your network connection.


An overview of all possible icons is given below. When the Client Manager icon is not indicating excellent or good radio connection, act as described below.

Icon	Color	Description
	Green	Excellent radio connection
	Green	Good radio connection
	Yellow	Marginal radio connection: The radio signal is weak. Move closer to the: <ul style="list-style-type: none">■ Access Point-I or Access Point-II, or■ Residential Gateway-I.

Icon	Color	Description
	Red	<p>Poor radio connection:</p> <p>The radio signal is very weak. Save your files and move closer to the:</p> <ul style="list-style-type: none"> ■ Access Point-I or Access Point-II, or ■ Residential Gateway-I.
	Red	<p>No radio connection because:</p> <ul style="list-style-type: none"> ■ Looking for initial connection, or ■ You have moved out of range of the network.
	Blank	No wireless interface detected or Peer-to-Peer network connection.

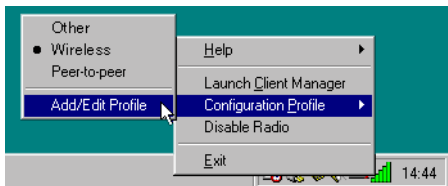
View/Modify USB Client Settings

If you would like to view or modify parameters, for example because you would like to connect to another network or type of network, proceed as follows:


1. Right-click on the Client Manager icon  on the Windows task bar.
2. From the menu, select **Configuration Profile** (see Figure 3-1) and select:
 - **Add/Edit Profile** to add a new profile or to modify an existing profile.
 - **One of the existing profiles** (if present) to select one of the defined profiles without viewing or modifying the settings.

After selecting another profile, the USB Client will use the selected profile to connect to the wireless network.


Figure 3-1 Edit Wireless Configuration Settings



If your Client Manager icon is not visible, you have to start the Client Manager program again:

1. Click the  **Start** button from the Windows task bar.
2. Next select **Client Manager** to start the program.

Alternatively you can use change the USB Client settings via the Control Panel:

1. Click the  **Start** button from the Windows task bar.
2. In the Control Panel window, double-click the **Wireless Network** icon.
3. (Optional) Change the parameters you would like to modify, and click
 - the **OK** button to confirm your changes, or
 - the **Cancel** button to ignore your modifications.

Find More Information

If you are looking for more information than contained in this manual, please consult one of the following options:

- The on-line help system of your wireless system - for information about software and driver functionality.

To view the on-line help system click the **Help** button or press the **F1** function key on your keyboard in any of the wireless software windows, or

- The “Wireless LAN Manager - User’s Guide” - a reference guide for LAN Administrators that need to setup, monitor and manage corporate LANs.
- Our website at: <http://www.avaya.com> - for frequently asked questions (FAQ’s) and Software Updates.



Advanced Configurations

4

Introduction

Although your USB Client will work fine in most network environments with the basic settings as described in *Install your USB Client* (page 2-1), you may wish to explore the advanced parameters options as displayed on the Configuration window for your adapter.

Advanced parameters are available only in the configuration profiles that connect to an access point.

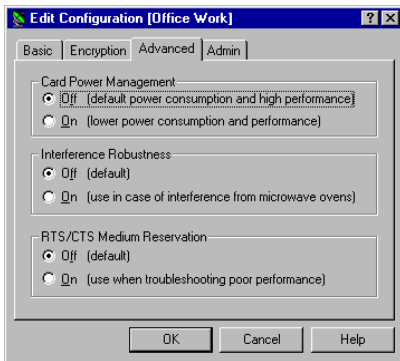
Consult your LAN Administrator for information about whether these parameters apply to your situation.

For more information consult your LAN Administrator. You can also refer to the help file and the “Wireless LAN Manager Suite User’s guide”.

Advanced Parameters Tab

This tab of the Edit Configuration window allows you to adjust a number of parameters related to the performance of your wireless adapter.

Figure 4-1 Setup Advanced Parameters



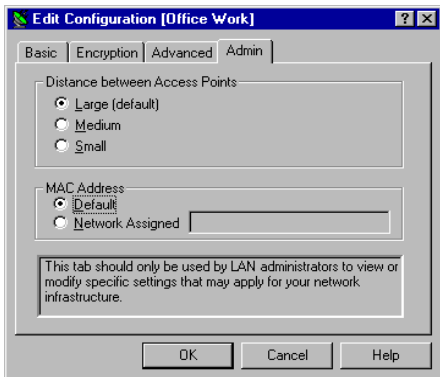
- Card Power Management allows you to extend the battery life of (mobile) wireless devices.
- Interference Robustness allows you to remedy slow performance related to in-band interference from devices like microwave ovens.
- RTS/CTS Medium Reservation controls the deferral behavior of wireless devices. Enabling this option may improve reliability of the network when:

- many wireless stations operate in an environment with relatively few access points, and
- network performance is poor network due to excessive frame collisions at the access points.

Admin Parameters Tab

The Admin parameters tab allows LAN Administrators to ensure that your adapter settings match specific settings that apply to the entire network.

Figure 4-2 Setup client Admin Parameters



- Distance between Access Points allows you to control network performance in relation to the number of access points in your network.
- MAC Address allows you to assign a local MAC address to your adapter in case your network operating system requires local addressing.

Specifications



Physical Specifications

Dimensions	(LxWxH)	63 x 89 x 145 mm
Weight	170 gram	
Cable length	100 cm	
Temperature & Humidity (non condensing)		
Operation	0° to 40° C ¹	maximum humidity 95%
Transit	-20° to 75° C	humidity 15 to 95%
Storage	-20° to 75° C	humidity 10 to 90%

1. Although the USB Client may still operate in the range of -20° to 70°C, operation outside the range of 0° to 40° C may no longer be according to specifications.

Power Characteristics

Doze Mode	10 mA
Receive Mode	245 mA (Nominal)
Transmit Mode	360 mA (Nominal)
Power Supply	5 V

Networking Characteristics

Compatibility	<ul style="list-style-type: none">■ IEEE 802.11 Standard for Wireless LANS (DSSS)■ Wi-Fi (Wireless Fidelity) certified by the Wireless Ethernet Compatibility Alliance (WECA).■ Universal Serial Bus Revision 1.1. specification
Host Operating System	Microsoft Windows® 98, ME and 2000: <ul style="list-style-type: none">■ NDIS5 Miniport Driver
Media Access Protocol	CSMA/CA (Collision Avoidance) with Acknowledgment (ACK)

Regulatory Information

Wireless communication is often subject to local radio regulations. Although wireless networking products have been designed for operation in the license-free 2.4 GHz band, local radio regulations may impose a number of limitations to the use of wireless communication equipment.

NOTE:

Refer to the flyer "Information to the User" for more regulatory information that may apply in your country.

Radio Characteristics

R-F Frequency Band	2.4 GHz (2400-2500 MHz)	
Supported sub-channels	1	2412
	2	2417
	3	2422
	4	2427
	5	2432
	6	2437
	7	2442
	8	2447
	9	2452
	10	2457
	11	2462

Modulation Technique	Direct Sequence Spread Spectrum CCK 11 & 5.5 Mb/s, DQPSK for 2 Mb/s and DBPSK for 1 Mb/s
Spreading	11-chip Barker Sequence
Bit Error Rate (BER)	Better than 10^{-5}
Nominal Output Power	15 dBm
Encryption	64-bit Wired Equivalent Privacy (WEP) - Silver 128-bit (RC4) - Gold

Range/Transmit Rate	11 Mb/s	5.5 Mb/s	2 Mb/s	1 Mb/s
Open Office	160 m (525 ft.)	270 m (885 ft.)	400 m (1300 ft.)	550 m (1750 ft.)
Semi-Open Office	50 m (165 ft.)	70 m (230 ft.)	90 m (300 ft.)	115 m (375 ft.)
Closed Office	25 m (80 ft.)	35 m (115 ft.)	40 m (130 ft.)	50 m (165 ft.)
Receiver Sensitivity	-83 dBm	-87 dBm	-91 dBm	-94 dBm
Delay Spread (FER of <1%)	65 ns	225 ns	400 ns	500 ns

The range of the wireless signal is related to the Transmit Rate of the wireless communication. Communications at lower Transmit Rates will travel larger distances.

NOTE:

The listed range values listed are typical distances as measured at the Avaya laboratories. These values may provide a rule of thumb and may vary according to the actual radio conditions at the location where the product will be installed.

- The range of your wireless devices can be affected when the antennas are placed near metal surfaces and solid high-density materials.
- Range is also impacted due to “obstacles” in the signal path of the radio that may either absorb or reflect the radio signal.

The listed ranges are typical ranges when used indoors in “office environments” that can be described as follows:

- In Open Office environments, antennas can “see” each other, i.e. there are no physical obstructions between them.
- In Semi-open Office environments, work space is divided by shoulder-height, hollow wall elements; antennas are at desktop level.
- In Closed Office environments, work space is separated by floor-to-ceiling brick walls.



Introduction

This appendix is divided into a number of sections, each with its own specific troubleshooting tips:

1. Common Troubleshooting Tips:
 - Can Not Connect To The Network (page B-5).
 - Can Not Edit Configuration Profile (page B-8).
 - LEDs Work But Can Not Connect to Network (page B-5).
 - Can Not Edit Configuration Profile (page B-8).
2. Windows 98/ME Troubleshooting Tips (page B-10):
 - Update the Driver (page B-10).
 - Remove the Driver (page B-13).
3. Windows 2000 Troubleshooting Tips (page B-16):
 - Update the Driver (page B-16).
 - Remove Existing USB Client Drivers (page B-17).

Common Troubleshooting Tips

LED Activity



If you encounter difficulty using and/or installing your wireless product, the error may be related to various causes:



- Out-of range situation, which prevents the USB Client from establishing a wireless connection with the network.
- Configuration mismatch, which prevents the USB Client from establishing a wireless connection with the (correct) network.
- Absence or conflict of the Wireless LAN Driver.
- A problem or conflict with the USB Client connector which prevents the USB Client from powering on.
- A conflict of the Wireless LAN hardware with another device.

The starting point to troubleshoot problems with your USB Client is looking at the LED activity of the USB Client.

Table B-1 on page 3 provides an overview of the various modes of operation and the associated LED activity. It also includes a number of troubleshooting hints, if required, that may help you solve the problem.

Table B-1 LED Status Table

Power  	Radio	Description/Action
Continuous Green	Blinking	Standard operational mode. <ul style="list-style-type: none"> ■ USB Client is powered on. ■ Sensing/transmitting wireless data.
	Off	<ul style="list-style-type: none"> ■ USB Client is powered on. ■ No wireless activity. No action is required.

 Power	 Radio	Description/Action
Off	Off	<p>USB Client is not powered on, so it can not transmit/receive data.</p> <p>The cause may be that the USB Cable is not properly connected.</p> <p>Actions:</p> <ul style="list-style-type: none"> ■ Check USB cable connection. ■ Verify the device settings of the USB Client to determine the occurrence of a conflict with another device. If so, change the settings of either your USB Client or the conflicting device to resolve the problem. ■ Verify the versions of the driver, and the embedded software in the USB Client (also referred to as Station firmware). ■ Consult our website at: http://www.avaya.com to see if newer versions are available and if so, upgrade both the embedded software and driver to the latest available version.
Red	Red	<p>Normal behavior at startup indicating startup diagnostics. This LED status only should last a few seconds and will disappear after Windows successfully loads the driver.</p>
Orange or Green	Red	<p>Device error, please contact your Authorized Reseller for Technical Support.</p>

Can Not Connect To The Network

If your USB Client seems to be working fine, but you are not able to connect to the network, this error might be due to a configuration mismatch.

For example if both LEDs of your USB Client blink once every ten seconds, the problem is likely to be caused by a configuration mismatch of:

- Network Name (this value is case-sensitive)
- Encryption Key

Other causes may be:

- No driver loaded.
- Station not authorized to access network.
- USB Client defect.

LEDs Work But Can Not Connect to Network

If you can not connect to the network while the LEDs indicate that the network is working properly (Power LED is on, Transmit Receive LED blinks) probably the TCP/IP settings of your network are not properly set.

Changing TCP/IP Settings

Consult your LAN Administrator for your the values of your TCP/IP settings.

To change the TCP/IP Settings:

1. On the Windows task bar click the **Start** button.
2. Select **Settings** and then select **Control Panel**.
3. On the Control Panel window, double-click on the **Network** icon to view the **Network Properties**.
 - If this protocol is not yet installed, click the **Add** button and select the **TCP/IP** protocol from the list. Refer to the Windows Help for more information.
 - If this protocol is installed, select this protocol and click the **Properties** button. Check if the parameters resemble the settings provided by your LAN Administrator. Make changes if necessary, and click **OK** when you are done.
4. When prompted, restart your computer.

Static IP Addressing for Peer-to-Peer networks

In networks with Static IP addressing, 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 you manually change the IP address in the **Network Properties** dialog box. Networks using Static IP addresses are easy to set up and do not require additional network management software.

A Peer-to-Peer network environment is best suited for **Static IP addressing**, because of its simplicity.

Peer-to-Peer networks are also not likely to have a DHCP server already set up on the network.

Configure TCP/IP Settings for Static IP Addressing



NOTE:

This IP configuration should only be applied to wireless networks that do not have a DHCP server installed.

1. Right-click **Network Neighborhood** on your desktop.
2. Select **Properties** from the pop-up menu to display the **Network Properties** dialog box.
3. Select the **Configuration** tab, and click **TCP/IP Avaya Wireless USB Card**.
4. Click **Properties** to display the **TCP/IP Properties** dialog box.
Make sure the **Specify an IP address** option is selected.



NOTE:

In accordance with private IP addressing you can use IP addresses from **192.168.0.1** to **192.168.0.254** with the Subnet Mask of **255.255.255.0**.

- Each computer on the network must have a unique IP address. It is best to assign the value **192.168.0.1**. to the first computer, **192.168.0.2** to the next computer and so on.
 - All computers on the network must use the same Subnet Mask value **255.255.255.0**.
5. Click **OK** to return to the **Network Properties** dialog box.

6. Select the **Identification** tab.
 - a. In the **Computer Name** field, create a unique name to identify the computer.

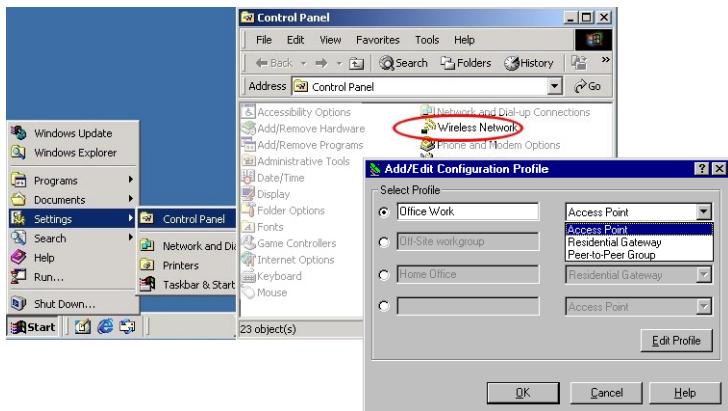
Each computer on the network must have a unique computer name.
 - b. In the **Workgroup** field, create a workgroup name. This name is the same for all computers on the wireless network.
- a. In the **Computer Description** field, you can enter a detailed description for the computer.
7. Click **OK** when completed. Click **Yes** to restart the computer with the new network settings.

Can Not Edit Configuration Profile

If you want to add/edit the Configuration Profile of your USB Client but the Client manager icon is not visible, you may do the following:

- If the Client Manager is not installed, try the following:
 1. From the **Start** menu, select **Settings**, and select **Control Panel**.
 2. In the Control Panel window, double-click the **Wireless Network** icon to open the "Add/Edit Configuration Profile" window pictured in Figure B-2.

Figure B-2 View/Modify USB Client Settings



Windows 98/ME Troubleshooting Tips

Update the Driver

Upgrading the Wireless LAN Driver may be required in one of the following situations:

- You would like to use new features that have become available for your USB Client.
- You installed a newer version of the Client Manager tool.
- Your Client Manager “Card Diagnostics” reported a Driver/Firmware mismatch.



CAUTION:

Upgrading the Driver should only be done by a skilled LAN Administrator or support engineer that has a working knowledge of the Microsoft Windows 98/ME operating system.

Windows 98/ME systems feature an “update driver” function that allows you to easily replace the current driver with a more recent version.

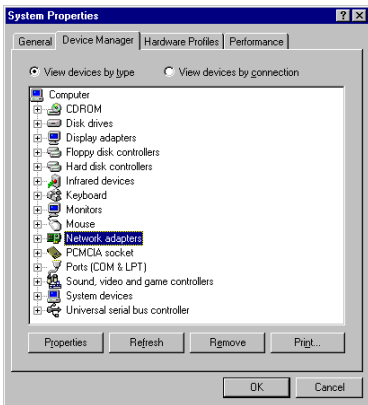
Updating the drivers

1. On the Windows Taskbar, click the **Start** button.
2. Click on **Settings**, and then click **Control Panel**.

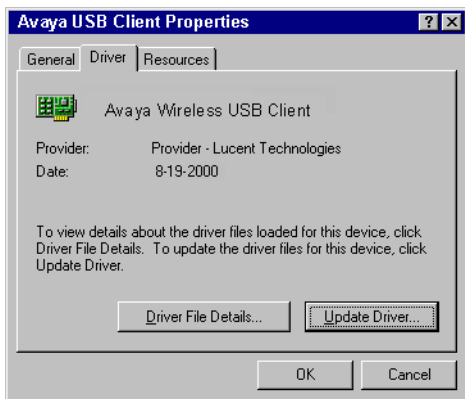
- In the Control Panel window, double-click the **System** icon.
- In the System Properties window, select the tab **Device Manager**.
- In the top section of the **Device Manager** tab, select the option **View devices by type** as pictured in Figure B-3.



Figure B-3 The Windows 98 Device Manager tab



- In the list of computer devices, double-click **Network Adapters**.
- In the USB Client Properties window, select the **Driver** tab to display the window pictured in Figure B-4.

Figure B-4 Windows 98 Update Driver Window


- To display information about the currently installed driver, click the **Driver File Details** button.
 - To upgrade your current driver to a newer version click the **Update Driver** button and follow the instructions displayed on your screen.
8. Restart your computer to finish the driver upgrade procedure and to have the new driver loaded by the operating system.
 9. (Optional) Upgrade the Client Manager program.

Remove the Driver

1. Close all applications that are currently open.
2. On the Windows Taskbar, click the **Start** button.
3. Click on **Settings**, then click **Control Panel**.
4. In the Control Panel window, double-click the **Network** icon.
The Windows operating system will disable the driver and update the driver configuration files. It will not delete the driver from your computer's hard disk.



This means that when you would re-insert the USB Client, your Windows operating system will attempt to activate the same driver files again.

5. When prompted to **Restart your computer** select:
 - **Yes**, if you don't mind that the driver and configuration files reside on your hard disk (the restart will finish your procedure to disable the driver).
 - **No**, if you would like to physically remove the drivers from your hard disk (typically required to upgrade the driver on a Windows 98/ME operating system).

Proceed as described under "Delete the Wireless LAN Driver Files" to delete the driver and its information and configuration files from your hard disk.

Delete the Wireless LAN Driver Files

The procedure to physically remove the Driver files from your hard disk is similar for all Windows operating systems.



CAUTION:

Prior to deleting the files from your hard disk, it is important to remove the drivers as described on page B-13. Failing to do so prevents the Windows operating system from cleaning the Windows Registry, which might lead to complications when you try to re-install the driver in the future.

1. Open the Windows Explorer.
2. In the Explorer menu, click on **View** and select **Folder Options**.
3. From the **View** tab, select **Show all files** and clear the check-box **Hide MS-DOS file extensions**.
4. Click the **Apply** button to return to the Explorer window.
5. Back in the Explorer, open the folder “**c:\windows\system**”.
6. Delete the driver files listed below:
 - **wcavamxx.exe**
 - **wiavaxx.dll**
 - **wlavaxx.sys**
 - **wavaxx.cpl**
 - **wuavaxx.vxd**
 - **wnavaxx.hlp**

■ wnavaxx.cnt

7. Next delete the “inf” file:

Delete the file: “**AVAYAWLAVAxX.INF**” from the folder “c:\windows\inf\other”.

8. Close the Windows Explorer and Restart your computer.

When deleting the Driver files was part of an “Upgrade Driver” routine, you can now (re-)install the new Driver as described in “Install your USB Client” on page 2-1.

Windows 2000 Troubleshooting Tips

Update the Driver

Updating the USB Client Driver may be required in one of the following situations:

- You would like to use new features that have become available for your USB Client.
- You installed a newer version of the Client Manager tool.
- Your Client Manager “Card Diagnostics” reported a Driver/Firmware mismatch.



CAUTION:

Updating the USB Client Drivers should only be done by a skilled LAN Administrator or support engineer that has a working knowledge of the Microsoft Windows 2000 operating system.

To update previously installed USB Client drivers:

1. Remove Existing USB Client Drivers from your Windows 2000 operating system, and
2. (Re-)Install the driver as described in “Install Drivers” on page 2-5.

**NOTE:**

Although the MS-Windows 2000 USB Client Properties window includes a special “update” button, it is not guaranteed that this button will truly update all driver files. Therefore Avaya advises you to remove and re-install the driver.

Remove Existing USB Client Drivers

1. Make sure your USB Client is inserted in the USB Client connector of your computer.
2. On your Windows desktop, right-click the **My Network Places** icon and choose **Properties** from the pop-up menu.
3. In the Network and Dial-up Connections window, right-click the **Local Area Connection** icon and select **Properties** from the pop-up menu.
4. Next click the **Configure** button to view the USB Client Properties window.
5. Select the **Driver** tab and click the **Uninstall** button to finish removing the USB Client drivers.
6. Finally disconnect the USB Client from its connector and proceed with the instructions as described under “Install Drivers” on page 2-5.

Figure B-5 Remove USB Client Drivers

