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Welcome

1

Introducing the Avaya Wireless LAN

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

This book introduces you to the Access Point-I, and will help you to get your network “on the air” very quickly. It describes the most common configurations and a quick start set-up.

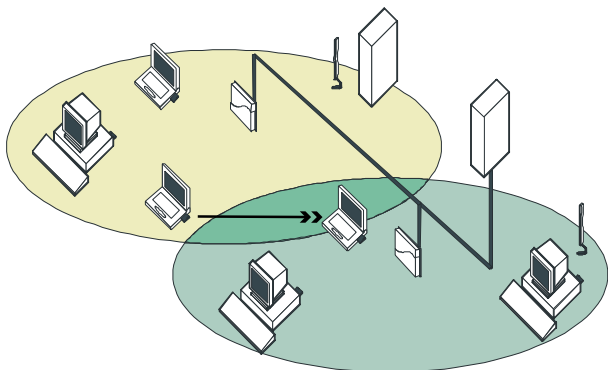
To install and manage Avaya Wireless LAN products, it is assumed that you have a working knowledge of installation procedures for network operating systems under Microsoft Windows.

About the Access Point-I

The Access Point-I is a wired to wireless bridge that you can use to connect wireless cells to one another or to a wired (ethernet) Local Area Network (LAN). The access point can serve mobile wireless stations roaming between various locations within a network premises.



To extend the total wireless coverage area you can add one or more Access Point-Is. In multiple cell networks the Access Point-Is are connected via a wired backbone that also allows to connect your wireless network to an existing wired infrastructure (see Figure 1-1).

Figure 1-1 Multiple Cell Network



Finding Information

The Getting Started Guide was designed to give you a brief introduction about the Access Point-I, and the most important information to get it up and running.

When you install the AP Manager program, you can display context-sensitive help with each screen by clicking the  or '?' button on your screen, or pressing the  key on your keyboard.

Alternatively you can consult the "Wireless LAN Manager - User's Guide" provided on the CD-ROM that was included with your product.

You can use the "Wireless LAN Manager - User's Guide" to find detailed information on how to:

- Design a wireless network.
- Setup a LAN administrator station.
- View and modify the start-up configuration of your Access Point-I.
- Monitor and optimize the performance of your wireless network.
- Troubleshoot unexpected performance.



Install your Access Point-I

2

Overview

Installing the Access Point-I is easy. Follow the steps below to power up your wireless network:

1. Verify Kit Contents.
2. Write Down Product Identification.
3. Connect Cables.
4. Mount the Access Point-I.
5. Power up your Access Point-I to start operation.



NOTE:

Before you start, please consult the flyer “Information to the User” for general installation and safety instructions.

Verify Kit Contents

Unpack the Access Point-I and verify that all items are present as pictured in Figure 2-1.

Figure 2-1 Access Point-I Kit Contents

- a. Access Point-I unit
- b. Power Adapter
- c. Table mount Bracket
- d. Wall mount Bracket
- e. Getting Started Guide (this document)
- f. CD-ROM containing software & electronic documentation

Write Down Product Identification

Before you proceed, write down the following values as printed on the identification label on the back of your Access Point-I:

Serial Number

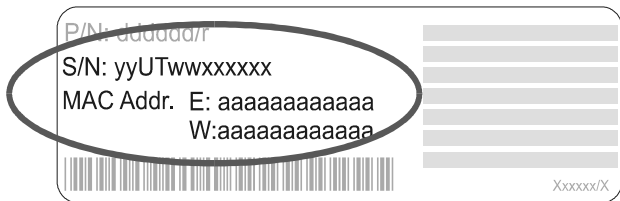
S/N

MAC Address

Ethernet Interface

Wireless Interface

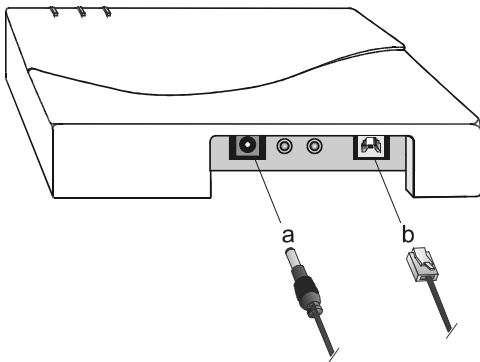
Figure 2-2 Access Point-I Identification Label



Connect Cables

1. Remove the unit from the bracket (if necessary).
2. Plug the connector of the power adapter into socket **a**.
3. To connect the Access Point-I to a wired Local Area Network, plug a 10Base-T Ethernet cable into socket **b**, as pictured in Figure 2-3.

Figure 2-3 Access Point-I Cable Sockets



WARNING:

When using the device in combination with our Power over Ethernet (Active Ethernet) solution, always use Shielded Twisted Pair (STP) cabling.

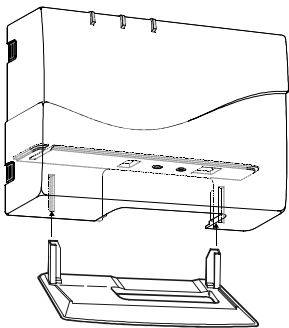
Mount the Access Point-I

The Access Point-I allows for placement in two different ways:

- Placement on a flat surface, using the table bracket.
- Placement on a wall, using the wall bracket (described on page 3-4).

For initial installation we recommend placement on a flat surface as described below:

Figure 2-4 Access Point-I with Table Bracket



1. Slide the Access Point-I over the bracket poles as pictured in Figure 2-4.
2. Put the Access Point-I upright on a flat surface.

Power up your Access Point-I




To power up the Access Point-I, connect the unit to a grounding type AC wall-outlet (100-240 VAC) using the standard power adapter as supplied with the unit.

Placement must allow for easily disconnecting the unit from the AC wall-outlet.

When powered on, the unit will perform start-up diagnostics characterized by a LED sequence. The LEDs will change color in the range Amber, Red and Green.

When finished (after about 15 seconds) the Access Point-I will start operation characterized by the LED activity as listed in Table 2-5.

Table 2-5 LED Activity Table

LED Definition		Activity	Description
	Power	Green	Power on
	Ethernet interface	Flicker Green	Ethernet LAN activity
	Wireless interface	Flicker Green	Wireless LAN activity

LED activity will only occur when there is network activity on the corresponding Access Point-I network interface.

If the Access Point-I does not switch to normal operation within two minutes, please consult the troubleshooting section of the “Wireless LAN Manager - User’s Guide” (see “Finding Information” on page 1-3).

Now your Access Point-I is ready for use. For more information about using your Access Point-I please consult 3 “Using the Access Point-I”.



Using the Access Point-I

3

Connect Computers to the Access Point-I

When powering up the Access Point-I for the first time, your Access Point-I is ready for use.

The unit will start bridging operation using the parameters as listed in B “Start-up Configuration”.

This mode enables you to connect wireless computers to your Access Point-I, provided that they have been configured to use Avaya Wireless LAN parameter values that match the configuration of your Access Point-I.

To connect stations to a brand new Access Point-I:

- Set the configuration profile of the wireless client stations to connect to an **“Access Point”**.
- Set the Network Name to **“ANY”**.
- Leave Encryption disabled.

For more information, please refer to the documentation that was shipped with your Avaya Wireless LAN client devices.

Customize Access Point-I Settings

To customize the configuration of your Access Point-I you can use the Avaya AP Manager software provided on the CD-ROM.

For example, you can use the AP Manager to change the Network Name and to enable wireless data encryption.

Install the AP Manager Software

1. Insert the Avaya Wireless LAN CD-ROM into the CD-ROM player of your computer.
Your operating system will automatically start the CD.
2. Select **Install AP Manager**.
3. Follow the instructions on your screen.



NOTE:

If the CD-ROM does not start automatically:

1. Click the Windows Start button
2. Select Run
3. Browse to the CD-ROM

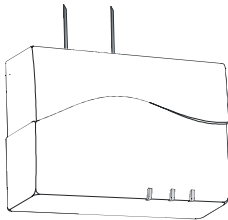
Previously installed versions of the software will be replaced automatically. The installation program will not delete or overwrite back-ups of configuration files that you might have created with a previous version of the program.

Mount the Access Point-I to a Wall

The Access Point-I performs best in an open environment. Mounting the unit as high as possible using the wall bracket provided, will ensure optimal performance of your wireless network.

The wall bracket allows for mounting the Access Point-I in various options. Mounting the unit as pictured in Figure 3-1, will ensure good visibility of the LEDs when mounted on a high location.

Figure 3-1 **Wall Placement**

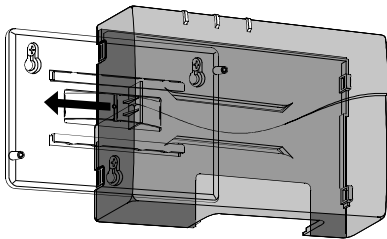


To mount the Access Point-I to a wall proceed as follows:

1. Determine a suitable location for your Access Point-I.
2. Place the mounting bracket against the wall to mark the screw positions on the wall.
3. Use the screws and the plugs provided to mount the wall bracket.

4. Gently slide the Access Point-I module over the bracket clips until it “clicks into place” as pictured in Figure 3-2.

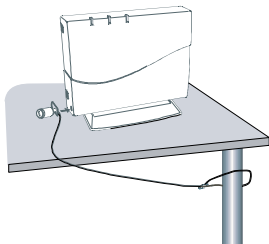
Figure 3-2 Fix the Access Point-I to its bracket



Lock your Access Point-I

To prevent theft or damage to your Access Point-I you can lock the device onto its position, using a Kensington lock and matching lock cord, which are not included with your Access Point-I, but available at your local computer store.

Figure 3-3 **Lock the Access Point-I**



1. Put one end of the lock cord around a solid object.
2. Attach the other end of the locking cord together with the Kensington lock to the Access Point-I unit as pictured in Figure 3-3.

If you decided to mount your Access Point-I to a wall, you can also use the special screw provided to secure the module to its wall bracket.

This locking option is recommended in public areas or environments where the unit might be subject to vibrations or earthquakes, but requires you to

open the Access Point-I as described in “Remove the Cover Plate” on page 3-8.

Remove the Cover Plate

Removing the cover plate of the Access Point-I may be required if:

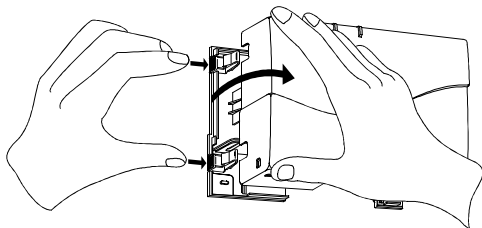
- You would like to extend the range of your Access Point-I using the Range Extender Antenna, or
- You would like to secure the Access Point-I to its mounting bracket.



CAUTION:

Electrostatic discharge may cause damage to your Access Point-I. To avoid damage, discharge your body's static electricity by touching a grounded metal object prior to opening the module, and refrain from touching the electronic components inside.

Figure 3-4 Remove the Cover Plate

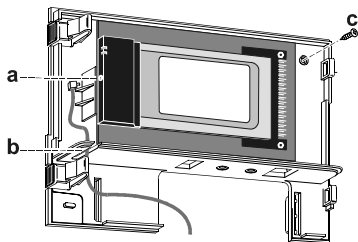


1. Press the latches as pictured in Figure 3-4.
2. Gently pull the side of the cover towards you as pictured in Figure 3-4.

Connect a Range Extender Antenna

3. Remove the protective cap **(a)** from the PC Card, and connect the antenna cable to the PC Card.
4. Next, guide the cable through recess **(b)** as pictured in Figure 3-5, and close the module again.

Figure 3-5 Inside the Access Point-I



Lock the Access Point-I to its Wall Bracket

To lock the Access Point-I to its wall bracket, open the module as described in “Remove the Cover Plate” on page 3-8.

Verify that the module is properly seated on the wall bracket and insert the provided screw in the prepared hole at point **(c)** as pictured in Figure 3-5.



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Specifications



Hardware

Physical specifications	Access Point-I	Power Adapter
Dimensions (HxWxL):	■ With Table Mount 145x175x70 mm ■ With Wall Mount 130x175x45 mm	35x49x73 mm
Weight	0,50 kg	0,10 kg
DC Power cord length	-	1,5 meter
Electrical specifications		
Voltage	100-240 V AC (47-63 Hz)	
Current	0.2 A max.	
Power consumption	< 10W	
Temperature and Humidity (no condensing)		
Operation	0 to +40 °C	max. 90%
Transit	-10 to +50 °C	max. 90%
Storage	-10 to +50 °C	max. 90%
Barometric Pressure	740 to 1050 hPa	
Network interfaces		
Ethernet interface	10 Base-T, Female RJ 45 socket	
Wireless interface	Built-in PC Card	

Radio Characteristics

R-F Frequency Band	2.4 GHz (2400-2500 MHz)																						
Selectable sub-channels	<table border="1"> <tr><td>1</td><td>2412 MHz</td></tr> <tr><td>2</td><td>2417 MHz</td></tr> <tr><td>3</td><td>2422 MHz</td></tr> <tr><td>4</td><td>2427 MHz</td></tr> <tr><td>5</td><td>2432 MHz</td></tr> <tr><td>6</td><td>2437 MHz</td></tr> <tr><td>7</td><td>2442 MHz</td></tr> <tr><td>8</td><td>2447 MHz</td></tr> <tr><td>9</td><td>2452 MHz</td></tr> <tr><td>10</td><td>2457 MHz (default)</td></tr> <tr><td>11</td><td>2462 MHz</td></tr> </table>	1	2412 MHz	2	2417 MHz	3	2422 MHz	4	2427 MHz	5	2432 MHz	6	2437 MHz	7	2442 MHz	8	2447 MHz	9	2452 MHz	10	2457 MHz (default)	11	2462 MHz
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9	2452 MHz																						
10	2457 MHz (default)																						
11	2462 MHz																						
Modulation Technique	Direct Sequence Spread Spectrum CCK at 11 Mb/s & 5.5 MB/s, DQPSK at 2 Mb/s, DBPSK at 1 Mb/s																						
Spreading	11-chip Barker Sequence																						
Bit Error Rate (BER)	Better than 10^{-5}																						
Nominal Output Power	15 dBm																						
Encryption	128 - (RC4), also supports 64-bit WEP (RC4)																						

Range/Transmit Rate	11 Mb/s	5.5 Mb/s	2 Mb/s	1 Mb/s
Open Office Environment	160 m (525 ft.)	270 m (885 ft.)	400 m (1300 ft.)	550 m (1750 ft.)
Semi-Open Office Environment	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 <1%)	65 ns	225 ns	400 ns	500 ns

**NOTE:**

The listed range values 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 wireless 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 range values 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.

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.



Start-up Configuration

B

Your Access Point-I comes with the access point operating software factory installed. Together with this software, the access point has also been loaded with a factory-set configuration, that allows for 'out-of-the box' operation.



NOTE:

The 'factory-set' configuration should not be confused with a 'default' configuration. For example, the device will NOT return to the 'factory-set' configuration, but to the 'default' configuration, when performing a 'reboot' or 'forced reload' (as described in the "Wireless LAN Manager - User's Guide" provided on the CD-ROM).

To connect to a Access Point-I, the Avaya Wireless LAN parameters of each wireless station should be configured to match the values as identified for the Access Point-I.

- When powering up the access point for the very first time, these values should match the values listed in Table B-1.
- For normal operation these values should match the ones you identified when configuring the access point. You are advised to record this information on the Access Point Configuration Record in this appendix.
- When you set the Access Point-I to 'forced reload mode' these values should match the settings listed in the "Wireless LAN Manager - User's Guide".



NOTE:

Consult the "Wireless LAN Manager - User's Guide" for detailed troubleshooting hints and procedures.

Table B-1 Factory-set Start-up Configuration

Access Point-I identifiers		
IP Address	153.69.254.254	
Subnet Mask	255.255.0.0	
Read Password	public	
Read/Write Password	public	
Wireless Interface		
RF-Channel	Channel 10	2.457 GHz
Network Name	WaveLAN Network	
Encryption	Disabled	
RTS/CTS Medium Reservation	Disabled	
Multicast Rate	Auto select 1-2 Mbit/s	

When installing multiple Access Point-I's, each unit should have a unique IP Address. In environments with DHCP or BOOTP services, this address will be assigned automatically.

If your network does not provide DHCP or BootP services, change the IP address of each Access Point-I into a unique address value using the AP Manager tool.

Access Point Configuration Record

Common Parameters	Wireless Network		Access Control			SNMP		
	Network Name: _____ _____		Access Control <input type="checkbox"/> Enabled Table File Name: _____ RADIUS server <input type="checkbox"/> Enabled			System Location: _____ IP Subnet Mask: _____ Read Password: _____ Read/Write Password: _____		
Access Point Unique Identifiers	Serial Number	MAC Address	IP Address	IF	Frequency	Device Location	Date Installed	Configuration File
				<input type="checkbox"/> E				
				<input type="checkbox"/> A				
				<input type="checkbox"/> B				
				<input type="checkbox"/> E				
				<input type="checkbox"/> A				
				<input type="checkbox"/> B				
				<input type="checkbox"/> E				
				<input type="checkbox"/> A				
				<input type="checkbox"/> B				
				<input type="checkbox"/> E				
				<input type="checkbox"/> A				
				<input type="checkbox"/> B				
				<input type="checkbox"/> E				
				<input type="checkbox"/> A				
				<input type="checkbox"/> B				
				<input type="checkbox"/> E				
				<input type="checkbox"/> A				
				<input type="checkbox"/> B				

