

# Socket® Wi-Fi® Products

## *For Windows Mobile*

- *Hardware: Go Wi-Fi!™  
Versions E300, E500, P300, P300x, P500, and P500x*
- *Software: Wi-Fi Companion*

## User's Guide



**socket**<sup>®</sup>  
Increasing Mobile  
Productivity

## Copyright Notice

Copyright © 2007 Socket Communications, Inc. DBA Socket Mobile, Inc.  
All rights reserved.

Socket, the Socket logo and Battery Friendly are registered trademarks of Socket Communications, Inc. DBA Socket Mobile, Inc. Wi-Fi Companion and Go Wi-Fi! are trademarks of Socket Communications, Inc. DBA Socket Mobile, Inc. Wi-Fi is a registered trademark of the Wi-Fi Alliance. All other brand and product names are trademarks of their respective holders.

Reproduction of the contents of this manual without the permission of Socket Mobile is expressly prohibited. Please be aware that the products described in this manual may change without notice.

Feel free to contact SOCKET MOBILE at:

**Socket Mobile, Inc.**  
39700 Eureka Drive  
Newark, CA 94560  
USA

Other than the above, Socket Mobile can assume no responsibility for anything resulting from the application of information contained in this manual.

Socket Mobile requests that you refrain from any applications of Socket Go Wi-Fi! or Wi-Fi Companion that are not described in this manual. Please refrain from disassembling the card. Disassembly of this device will void the product warranty.

You can track new product releases, software updates and technical bulletins by visiting the Socket website at: [www.socketmobile.com](http://www.socketmobile.com).

# Table of Contents

Copyright Notice	2
<b>1   Introduction</b>	<b>5</b>
Socket Go Wi-Fi!	5
Socket Wi-Fi Companion	5
System Requirements	6
Product Registration	6
Useful Links	7
<b>2   Software Installation</b>	<b>8</b>
Software Installation	8
Software Registration — Built-in WLAN Radios only	11
<b>3   Open or WEP-Enabled Networks</b>	<b>14</b>
STEP 1: Insert Go Wi-Fi! or Turn on Built-in WLAN Radio	15
STEP 2: Start Wi-Fi Companion	16
STEP 3: Find and Connect to a WLAN	17
STEP 4: Connect Automatically to Your Network	20
<b>4   WPA or 802.1x Networks</b>	<b>22</b>
STEP 1: Prepare Network Information	23
STEP 2: Install Authentication Certificate(s)	24
STEP 3: Insert Go Wi-Fi! or Turn on WLAN Radio	26
STEP 4: Start Wi-Fi Companion	27
STEP 5: Find a WLAN and Create a Profile	28
<b>5   Wi-Fi Companion</b>	<b>34</b>
Turn Wireless Radio On/Off	35
View IP Addresses	36
Find Networks	37
Enable Power Save	39
Install Personal Certificate for EAP-TLS	40
Manage Certificates	41
Ping	42
Trace Route	44
View Rates	46
View Graphs	47
View Tables	48
View Help Files	49
<b>APPENDICES</b>	
<b>A   Specifications</b>	<b>50</b>
<b>B   Safety and Usage Tips</b>	<b>58</b>
<b>C   Network Information</b>	<b>60</b>
<b>D   Troubleshooting</b>	<b>62</b>

<b>E   Technical Support</b>	<b>63</b>
Limited Warranty	65
Limited Software Warranty	66
Regulatory Compliance for Go Wi-Fi!	67

# 1 | Introduction

Socket Wi-Fi products for Windows Mobile are the perfect tools to connect to enterprise and public Wi-Fi systems, so you can access email, the Internet, and corporate servers from your favorite Pocket PC.

## Socket Go Wi-Fi!

Available in both Secure Digital (SD) and CompactFlash (CF) form factors, Socket Go Wi-Fi! wireless LAN cards use Direct Sequence Spread Spectrum (DSSS) technology to provide a high-capacity network and are Wi-Fi Certified to interoperate with other Wi-Fi products. The E300 and E500 conform to IEEE 802.11b specifications with data rates up to 11 Mbps. The P300, P300x, P500 and P500x comply with IEEE 802.11b/g with data rates up to 54 Mbps.



The Battery Friendly<sup>®</sup> Go Wi-Fi! cards were designed to use minimal power, so you can use them longer without having to stop and recharge your Pocket PC.

The cards work with these types of WLAN security:

- Open systems
- 40/64-bit or 128-bit WEP encryption
- 802.1x with EAP-TLS or PEAP
- WPA and WPA-PSK (Windows Mobile 2003SE and 5.0 only)

Socket Go Wi-Fi! P300 and P500 also support AES and WPA-2 Enterprise. Odyssey Client from Juniper Networks is required. For more information, please visit:

[www.juniper.net/customers/support/products/oac.jsp](http://www.juniper.net/customers/support/products/oac.jsp)

## Socket Wi-Fi Companion

Socket Wi-Fi Companion is an intuitive and graphical utility for Pocket PCs with either a Socket Go Wi-Fi! card or a built-in WLAN radio. The software enables you to find WLANs in range, view their properties in detail, and connect whenever your favorite networks are available. You can even manage power settings to maximize battery life. Plus, diagnostic tools and connection statistics are provided for advanced users.



## System Requirements

*Note: For information about support for MontaVista Linux and Real-Time Operating Systems (RTOS), please email [developers@socketmobile.com](mailto:developers@socketmobile.com)*

*Minimum device requirements for Wi-Fi Companion software:*

- Pocket PC running Windows Mobile 2003, 2003SE or 5.0
- Socket Go Wi-Fi! card or WLAN radio built into Pocket PC
- Software installation via ActiveSync requires ActiveSync 4.0 or greater. Alternatively, advanced users can install a CAB file.

*Additional device requirements for Go Wi-Fi! E300, P300 or P300x (SD cards):*

- Available SDIO slot
- For Windows Mobile 2003/2003SE, SDIO *Now!* software from BSQUARE is required in ROM

*Additional device requirements for Go Wi-Fi! E500, P500 or P500x (CF cards):*

- Available CF or PC Card slot (PC Card adapter required for PC slot)
- The Go Wi-Fi! E500 only connects to access points or radios that use long preamble. Every 802.11b/g access point supports long preamble, and most are configured this way by default.

## Product Registration

*Software Activation for Software-Only Package*

**If you purchased Socket Wi-Fi Companion for use with your Pocket PC's built-in WLAN radio, product registration is required to activate a full version of the software.** Otherwise, the software will expire three days after installation. Register at: [www.socketmobile.com/wfc](http://www.socketmobile.com/wfc). See Chapter 2 for instructions. This website is specifically for Wi-Fi Companion activation and not the general product registration site.

*General Product Registration*

**Registration is not required to use Wi-Fi Companion with the Go Wi-Fi! cards**, but is highly recommend. Registered users receive the following benefits:

- Priority for technical support
- Special offers for future products and product upgrades
- The latest new product information

Register online at: [www.socketcom.mobile/prodreg](http://www.socketcom.mobile/prodreg). Do not use this website to try to obtain an activation code for Wi-Fi Companion.

## Useful Links




- Software updates: [www.socketmobile.com/support/support\\_wlan.asp](http://www.socketmobile.com/support/support_wlan.asp)
- Device compatibility database: [www.socketmobile.com/matrix](http://www.socketmobile.com/matrix)
- For a list of Wi-Fi hotspots and service providers in your area, visit [www.socketmobile.com/product/wlan.asp](http://www.socketmobile.com/product/wlan.asp) and click on the Public HotSpots info link.

## Go Wi-Fi! Status Indicator LEDs



### *E300/P300 Link LED*

LED	LED Behavior	Meaning
Link	Off	Radio disabled/cannot transmit.
	Slow flash	Radio on, not connected.
	On	Connected

### *E500 LEDs*

LED	LED Behavior	Meaning
Power  Green	Off	Radio disabled/cannot transmit.
	Flashing	Radio on, using Power Save Mode
	On	Radio on, not using Power Save Mode
Activity  Amber	 Off	Radio disabled/cannot transmit.
	Slow flash	Radio on, no data traffic.
	Rapid flash	Connected. Faster flash denotes greater network activity.

### *P500 LEDs:*

LED	LED Behavior	Meaning
Power  Green	Off	Power off.
	On	Power on.
Activity  Blue	Off	Not connected.
	Flashing	Transmitting/receiving data.
	On	Connected.

## 2 | Software Installation

Follow these instructions to install the software into your Pocket PC.

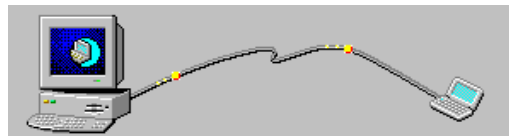
- If you are using Wi-Fi Companion with the built-in WLAN radio of your Pocket PC, you will need to register the software after you install it to activate a full version of the software.
- If you are using Socket Go Wi-Fi!, you will need to install two software components: the card drivers and Wi-Fi Companion. No software registration is required to use the software with Go Wi-Fi!

A

*DVANCED USERS: For CAB file installation instructions, please refer to the README file in the installation CD.*

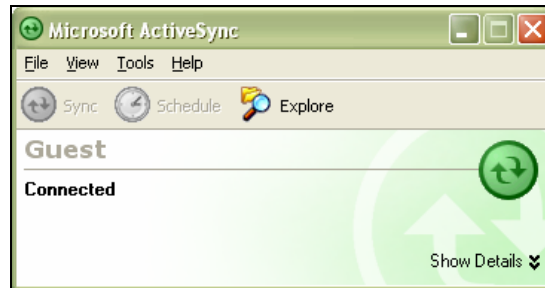
### Software Installation

1. Go Wi-Fi!: If your Pocket PC already has an older version of Socket WLAN software, you must completely remove it before you install the new software. Remove both the utility and the card drivers.
  - Make sure the WLAN card is not in the Pocket PC.
  - Tap Start | Settings | System tab | Remove Programs.
  - Select the WLAN card drivers and tap Remove.
  - Repeat to remove the WLAN utility.
  - Soft reset the Pocket PC by pressing the reset button.
2. Make sure you have ActiveSync 4.0 or greater. Download it free online: [msdn.microsoft.com/mobility/windowsmobile/downloads/default.aspx](http://msdn.microsoft.com/mobility/windowsmobile/downloads/default.aspx)
3. Make an active connection between your Pocket PC and a host PC. Use ActiveSync and a serial/USB connection cable or cradle.





ActiveSync should report Connected, and the ActiveSync icon should turn green.



4. Insert the installation CD into your host PC. Use My Computer or Windows Explorer to access your CD-ROM drive.



Alternatively, if you downloaded the software from Socket's website, extract and save the contents to your computer. Remember where you save the software.

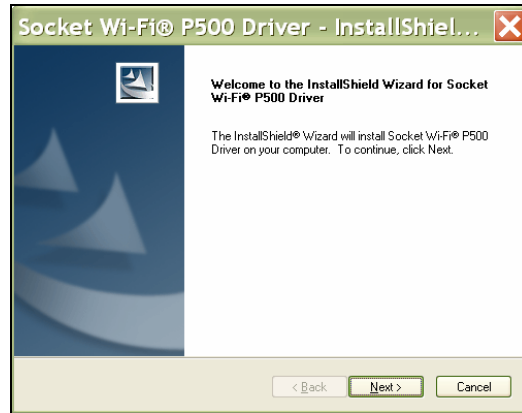
5. *If you plan to use Socket Go Wi-Fi!*, you must install the card drivers first, then install Wi-Fi Companion. In the CD contents, click on the correct DriverSetup.exe file for your version of Socket Go Wi-Fi!



*If you plan to use the built-in WLAN radio of your Pocket PC*, install Wi-Fi Companion. In the CD contents, click on WIFISoftwareSetup.exe.



6. The InstallShield Wizard will begin. Follow the wizard to install the software.



7. *If you plan to use Socket Go Wi-Fi!*, after installing the card drivers, install Wi-Fi Companion. Return to the CD contents and click on WiFiSoftwareSetup.exe. Follow the wizard to install the software.



8. After software installation, disconnect the Pocket PC from the host PC.
9. Soft reset the Pocket PC by pressing the reset button.



**IMPORTANT! If you installed Socket Wi-Fi Companion on a Pocket PC with built-in WLAN, you must register the software. Otherwise, the software will expire in three days. See the instructions on the next page.**

**No software registration is required for Socket Go Wi-Fi!**

## Software Registration — Built-in WLAN Radios only

1. To register the software, access Socket's Wi-Fi Companion Software Registration Wizard at [www.socketmobile.com/wfc](http://www.socketmobile.com/wfc).
2. In the first screen, enter the CD Serial Key printed on a sticker inside the CD case.

Socket Wi-Fi Companion Software Registration Wizard

Current Step 1 2 3

Step 1 of 3

**Enter your CD Serial Key:**

CD Serial Key:

Continue Cancel

**Where is the CD Serial Key?**

The CD Serial Key is a 26 character alpha-numeric sequence which may or may not contain dashes.

If you bought the software on a CD from a retail store or Dell website, find the CD Serial Key printed on a sticker inside the CD case.

OR

If you bought Wi-Fi Companion software from the Socket Store, you should

3. As directed in the next screen, check your Pocket PC's owner name. **To register the software, you will need to enter the owner name.**

If you have not assigned an owner name yet to your Pocket PC, tap Start | Settings | Owner Information to do so.

*Note: Some devices automatically enter a space after the owner name. Make sure you delete any space after your owner name.*

4. In the next screen, enter your Pocket PC's owner name.

Socket Wi-Fi Companion Software Registration Wizard

Current Step 1 2 3

Step 2 of 3

**Enter your Windows Mobile Owner Name:**

CD Serial Key: ----

Owner Name :

Review notes below before you continue.

Back Continue Cancel

**Where can I find my Windows Mobile Owner Name on my device?**

Start 1

Settings 2

Owner Information 3

Name: John Doe

Company

Address

Telephone:

Identification Notes Options

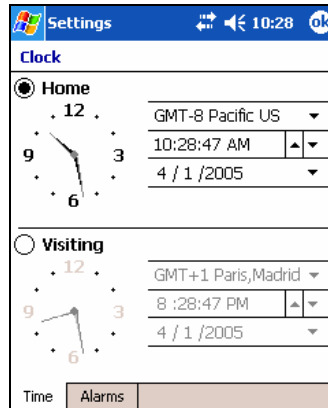
**Note:** The Windows Mobile Owner Name is case, space and punctuation-sensitive. Please enter it exactly as it appears on your device. An incorrectly entered Windows Mobile Owner Name may generate an invalid registration key.

Please turn on your device and tap on START > SETTINGS > OWNER INFORMATION.

If the Windows Mobile Owner Name on your device is

5. Complete the rest of the wizard. You will receive an activation code by email.
6. Make sure your Pocket PC's clock is set for the correct date, or the registration code will be rejected.

Tap Start | Settings | Clock. After adjusting the date, tap ok.



7. Start Wi-Fi Companion. Either turn on the WLAN radio of your Pocket PC to automatically launch the program, or tap Start | Programs | Wi-Fi Companion.

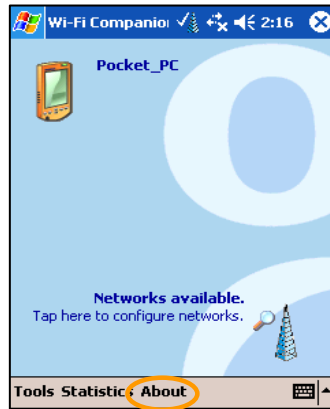


8. Tap on the Socket status icon at the top of your screen to view the main screen of Wi-Fi Companion.



*Socket status icon,  
search mode.*

9. In the main screen of Wi-Fi Companion, tap **About** at the bottom of the screen.



10. At the bottom of the About screen, tap **Register**.

11. In the Product Registration screen, enter the code you received by email.  
Tap **ok**.



## 3 | Open or WEP-Enabled Networks

This section covers how to use Socket Wi-Fi Companion to find, configure and connect your Pocket PC to a WLAN running an open system or WEP encryption. Before you begin the instructions in this chapter, make sure you have installed the software, as described in Chapter 2.



*For help using the software, tap Start | Help.*

### Connection Summary

- STEP 1: Insert Go Wi-Fi! or turn on WLAN radio.
- STEP 2: Start Wi-Fi Companion.
- STEP 3: Find a WLAN and create a profile.
- STEP 4: Connect automatically to your network.



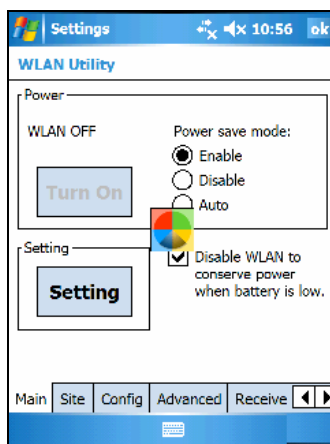
## STEP 1: Insert Go Wi-Fi! or Turn on Built-in WLAN Radio

*If using Socket Go Wi-Fi!*, insert the card into the card slot of your Pocket PC. Make sure the card is positioned correctly in the slot. In most cases, it should be right-side up. Do not use excessive force, or damage may occur.



*Note: To remove the SD card, press it into the slot. A spring will push the card out. Do not remove the card by simply pulling, or damage may occur.*

*If using a WLAN radio built into your Pocket PC*, turn on the radio. Refer to your Pocket PC manual for instructions.



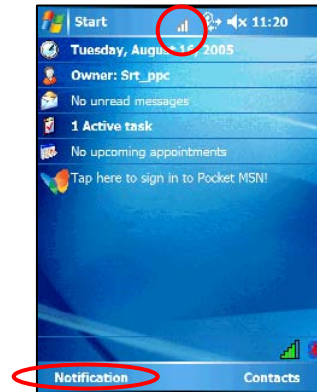
*Note: Your screen may vary from the one shown.*

## STEP 2: Start Wi-Fi Companion

1. After you insert the WLAN card or turn on the WLAN radio of your Pocket PC, Wi-Fi Companion will automatically launch, indicated by the Socket status icon at the top of the screen. Tap on the icon. The icon varies depending on your connection status.



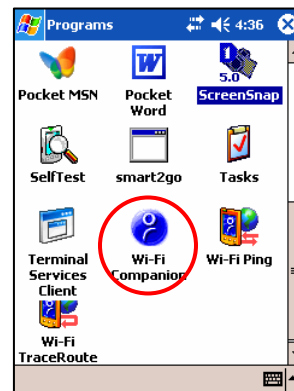
*Socket status icon, search mode.*



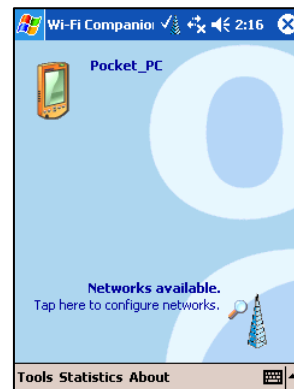
Windows Mobile 5.0: You can also tap **Notification** at the bottom of the Today screen to access the main screen of Wi-Fi Companion.

Alternatively, you can manually start the program by tapping:

Start | Programs | Wi-Fi Companion.



2. The main screen of Wi-Fi Companion will appear.





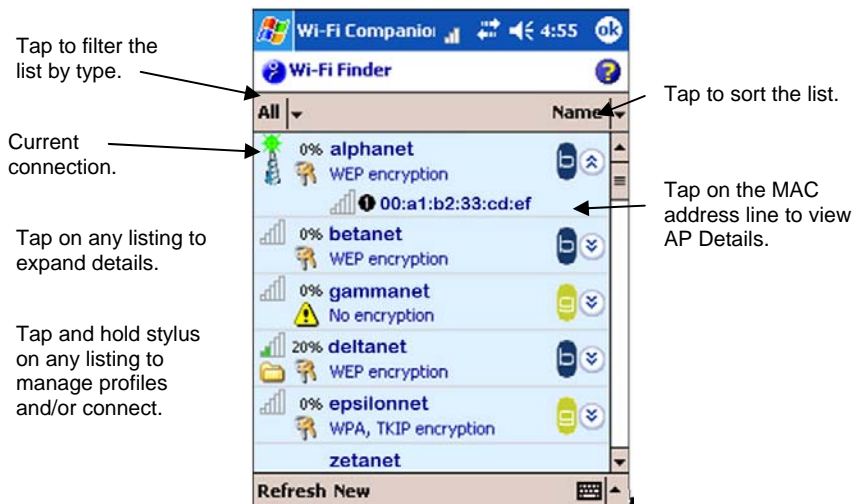
### STEP 3: Find and Connect to a WLAN

1. In the main screen of Wi-Fi Companion, tap on the large tower icon, or tap Tools | Wi-Fi Finder.



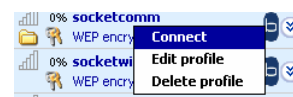
2. Wi-Fi Finder will list WLANs detected in range. Tap on any WLAN in the list to view additional properties.

If desired, tap on the **Type** or **Sort by** drop-down menus to change how the list is displayed. By default, **All** types are displayed, sorted by **Name**. If your WLAN is not listed, tap **Refresh**.



	Signal strength of strongest AP/ad hoc radio		Channel number
	WEP encryption, WPA (PSK), WPA (TKIP) or 802.1x		Profile saved
	No encryption		802.11b, 802.11g

3. If Wi-Fi Finder cannot find your WLAN because its SSID is hidden, tap **New** at the bottom of the screen to create a new profile for your network.
4. If your WLAN has a profile (indicated by a folder icon), Wi-Fi Companion may have already connected to it, indicated by a tower icon with a green burst on top.



To connect to a WLAN with a profile, tap and hold your stylus on the WLAN in the list. In the pop-up menu, tap **Connect**.

5. If your WLAN does not have a profile (no folder icon), tap and hold your stylus on the WLAN in the list, then tap **Get connected** to create a profile for the selected SSID.



### Creating a WLAN Profile

After you tap **New** or **Get connected** in Wi-Fi Finder, you will be directed to **Wireless Zero Config (WZC)**, the wireless connection editor built into Windows Mobile, to create a WLAN profile. For help with WZC, please refer to your Pocket PC manual. Consult with your network administrator to determine the settings needed to connect to your network.

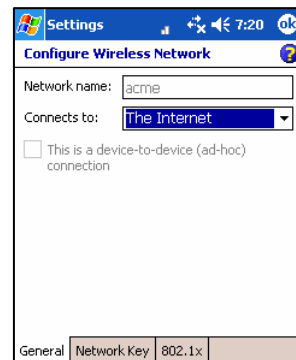
1. In the **Configure Wireless Network** screen, enter the **Network name (SSID)** if it isn't already provided. The SSID is case-sensitive.

#### Connects to:

Select either **The Internet** or **Work**.

*Note: In most cases, you should select **The Internet**. For a VPN/proxy server, refer to your Pocket PC manual for instructions.*

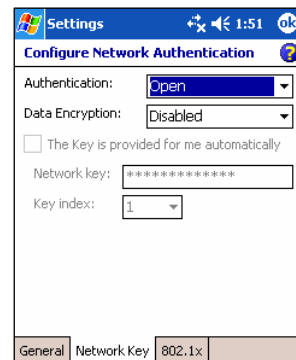
2. Follow the appropriate instructions for your type of network to enter the necessary security settings.



#### Open Networks

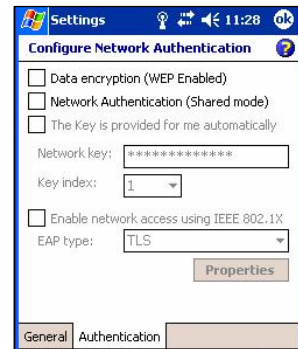
Depending on your Pocket PC version, your device may show two or three tabs at the bottom of the screen. If your device shows three tabs, enter the following settings:

- Network Key tab:  
Authentication: Select **Open**.  
Data Encryption: Select **Disabled**.
- 802.1x tab:  
Do not enter any settings. Tap **ok**.



If your device shows two tabs, enter the following settings:

- Authentication tab:  
Uncheck all boxes. Tap ok.



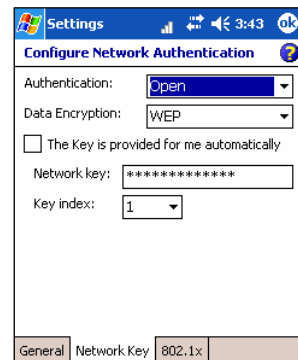
### WEP-Enabled Networks

Make sure your WEP key has the correct length. For 40/64-bit WEP, the key length is 10 hexadecimal or 5 ASCII characters. For 128-bit WEP, the key length is 26 hexadecimal or 13 ASCII characters.

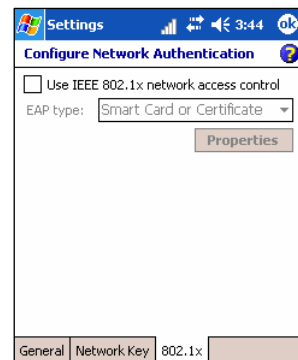
Depending on your Pocket PC version, your device may show two or three tabs at the bottom of the screen. If your device shows three tabs, enter the following settings:

- Network Key tab
  - Authentication: Select Open.
  - Data Encryption: Select WEP.
  - The Key is provided for me automatically: Uncheck. Enter the Network key and Key index. Use the correct key length.

T



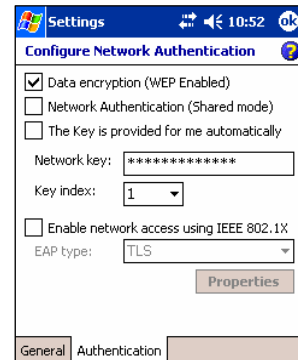
- 802.1x tab  
Uncheck Use IEEE 802.1x network access control and tap ok.



If your device shows two tabs, enter the following settings:

➤ Authentication tab

- **Data encryption:** Check.
- **Network Authentication:** Check if your network is set up for this. In most cases, you should uncheck.
- **The key is provided to me automatically:** Uncheck. Enter the Network key and Key index. Use the correct key length.
- **Enable network access using IEEE 802.1X:** Uncheck. Tap ok.



## STEP 4: Connect Automatically to Your Network





1. After you enter the settings and tap **ok**, your device will automatically try to connect. You may see the Socket status icon at the top of your screen change from “networks available” to “networks out of range but configured.”
2. When your Pocket PC has connected, the following will occur:
  - The Socket status icon will change to 1-5 bars.
  - The “x” will vanish from the connection icon.
  - In Wi-Fi Finder, the WLAN will appear first in the list, showing a signal tower with a green burst on top.



*Note: After you save a profile for a WLAN, Wi-Fi Companion will automatically try to connect to it whenever you insert the WLAN card or turn on the WLAN radio built into your Pocket PC.*

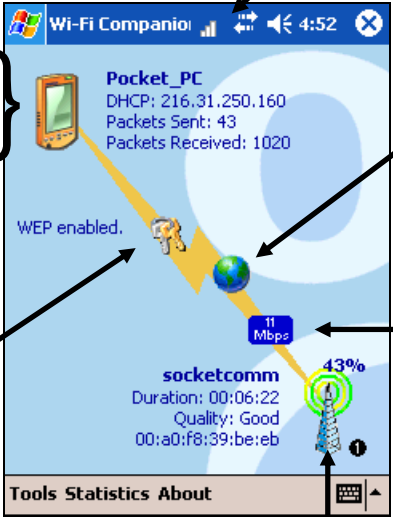
3. Tap **ok** to return to the main screen.

Socket Status Icons

	Associated or Connected. Number of bars indicates signal strength.		Searching for networks.
	Networks available.		Networks out of range but configured.

Main Screen of Wi-Fi Companion

The screen content varies depending on your connection status.



The screenshot shows the main screen of the 'Wi-Fi Companion' utility. At the top, the title bar reads 'Wi-Fi Companion' with system icons for signal strength, volume, and time (4:52). The main content area displays information for a device named 'Pocket\_PC', including its DHCP IP address (216.31.250.160), packets sent (43), and packets received (1020). It also indicates 'WEP enabled' with a key icon and shows a data rate of '11 Mbps'. Below this, the connection name 'socketcomm' is shown along with its duration (00:06:22), quality (Good), and MAC address (00:a0:f8:39:be:eb). A signal strength indicator shows '43%' with a tower icon. At the bottom, there are three tabs: 'Tools', 'Statistics', and 'About'. A keyboard icon is visible in the bottom right corner.

Your device properties.

- Device name
- IP address
- Packets sent and received

The icon always appears regardless of connection status. Tap to view more IP addresses. For P300/P500, also tap to turn the radio on/off

Encryption status.  
Tap to access a certificate management utility for WPA or 802.1x if needed.

Socket status icon. Tap to access this screen from outside the utility.

Internet ready. Tap to access email, the Internet, ping or trace route. Icon appears only when Internet access is ready.

Data rate. Tap to view signal strength and data rate distribution.

Access point/remote device properties.

- SSID
- Connection duration
- Signal quality rating and percentage
- MAC address (also known as BSSID)
- Channel number (in black circle)

Tap for Wi-Fi Finder.

## 4 | WPA or 802.1x Networks

This section covers how to use Socket Wi-Fi Companion to configure and connect your Pocket PC to a WLAN running WPA or 802.1x with PEAP or EAP-TLS authentication. Before you begin the instructions in this chapter, be sure to install the software, as described in Chapter 2.



**TIP**

*WPA is supported by Windows Mobile 5.0 and 2003 Second Edition devices as well as some Windows Mobile 2003 (original version) devices with an updated ROM from the device manufacturer. If your device supports WPA, WPA and WPA-PSK options will appear in the “Configure Wireless Networks” screen.*



**TIP**

*For help using the software, tap Start | Help.*

### Connection Summary

- STEP 1: Prepare network information.
- STEP 2: Install authentication certificate(s).
- STEP 3: Insert Go Wi-Fi! or turn on WLAN radio.
- STEP 4: Find a WLAN and create a profile.
- STEP 5: Connect automatically to your network.

## STEP 1: Prepare Network Information

### **Verify Device and Network Compatibility**

Some Pocket PCs can only connect to certain types of WPA and 802.1x networks. Check with your Pocket PC manufacturer. Your Pocket PC may only be able to connect to WPA and 802.1x networks that satisfy requirements such as:

- Windows Internet Information Service (IIS)
- Windows Internet Authentication Service (IAS)
- Windows Certification Authority (CA) with automatic approval and correct Pocket PC certificate format (via MS certificate template)
- Access point configured only for WPA or 802.1x (i.e., no multi-mode support or static 128-bit WEP keys)

### **Prepare Security Settings**

If the network is compatible, ask the administrator for the necessary security settings:

- Wireless network name, known as SSID (case sensitive)
- Authentication type, user name, password, domain
- Pre-Shared Key, key format (hex or ASCII)
- Use of either DHCP or Static IP to assign IP addresses
- Authentication permission restrictions (e.g., domain administrators only)

For a Network Information Form that you can send to your network administrator, go to any of the following:

- Appendix C of this *User's Guide*
- Docs folder on the CD
- [ftp://ftp.socketmobile.com/wlan/WLAN\\_NetworkForm.txt](ftp://ftp.socketmobile.com/wlan/WLAN_NetworkForm.txt)



*If your network only allows domain administrators to authenticate, ask your network administrator to assign you this privilege.*

### **Obtain Authentication Certificate(s)**

- Ask the network administrator for a copy of the root certificate from a Trusted Root Authority (no intermediary authority) if required. Installation instructions begin on the next page.



*EAP-TLS only: You also need to set up a cabled connection to the network to install a personal certificate. Installation instructions begin on the next page.*

## STEP 2: Install Authentication Certificate(s)

If your network uses PEAP authentication, you need to install only a root certificate. If your network uses EAP-TLS authentication, you need to install both a root and a personal certificate.

### *Install a Root Certificate*

1. If you have not done so already, get a root (server) certificate from your network administrator. The root certificate must come from a Trusted Root Authority (not an intermediary authority).
2. If Socket Go Wi-Fi! is inserted into your Pocket PC, remove it.
3. Make an active connection between your Pocket PC and host PC. Use ActiveSync and a serial/USB cable or cradle.

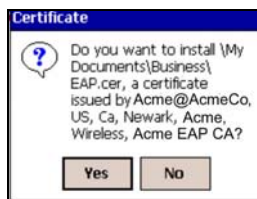


4. Use My Computer or Windows Explorer to access your Mobile Device and copy the root certificate into your Pocket PC. Remember where you save the certificate.



Mobile Device

5. On your Pocket PC, use File Explorer to navigate to the file location. Tap on the certificate.
6. A message will ask if you want to install the certificate. Tap Yes.



- If your network uses PEAP, disconnect your Pocket PC from the host PC. Soft reset the Pocket PC by pressing the reset button. Now you are ready to insert the Go Wi-Fi! card or turn on your Pocket PC's built-in radio.
- If your network uses EAP-TLS, you also need to install a personal (client) certificate.



## Install a Personal Certificate

1. To install a personal certificate, start Wi-Fi Companion. Tap Start | Programs | Wi-Fi Companion.

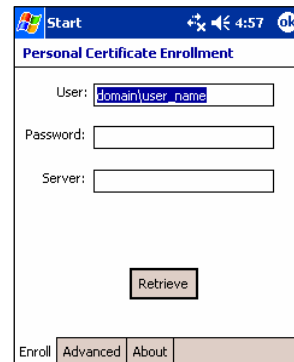


2. In the main screen of Wi-Fi Companion, tap on the keys icon if present. Alternatively, you can tap Tools | Certificates | Enroll.



3. Enter the User, Password, and Server provided by your network administrator. In the User field, enter your domain and user name in the format shown, using a backslash (“\”) between the domain and user name.

*Note: In the Server field, enter either the name or the IP address (using standard dot notation) of the server running Certificate Services on your network.*



4. Tap Retrieve. After your Pocket PC retrieves a personal certificate, tap ok.
5. Disconnect the Pocket PC from the host PC.

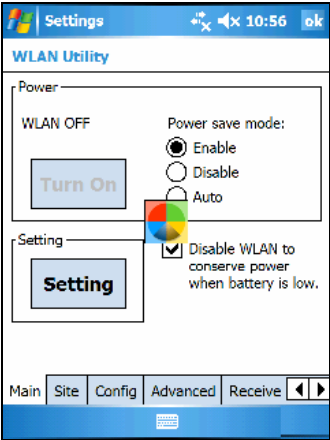
### STEP 3: Insert Go Wi-Fi! or Turn on WLAN Radio

*If using Socket Go Wi-Fi!*, insert the card into the slot of your Pocket PC. Make sure the card is positioned correctly in the slot. In most cases, it should be right-side up. Do not use excessive force, or damage may occur.



*Note: To remove the SD card, press it into the slot. A spring will push the card out. Do not remove the card by simply pulling, or damage may occur.*

*If using a WLAN radio built into your Pocket PC*, turn on the radio. Refer to your Pocket PC manual for instructions.



*Note: Your screen may vary from the one shown.*

## STEP 4: Start Wi-Fi Companion

1. After you insert the WLAN card or turn on the WLAN radio of your Pocket PC, Wi-Fi Companion will automatically launch, indicated by the Socket status icon at the top of the screen. Tap on the icon. The icon varies depending on your connection status.



*Socket status icon, search mode.*

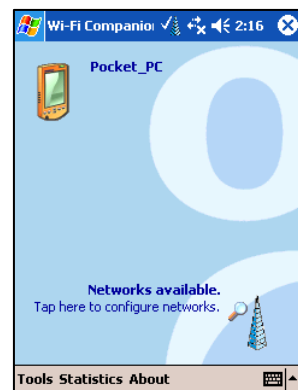
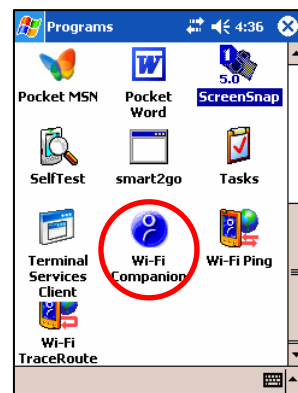
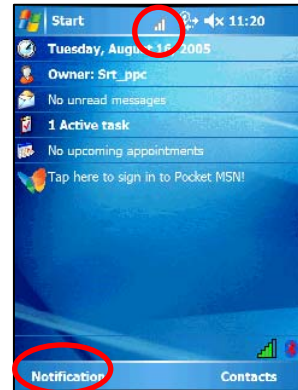
Windows Mobile 5.0: You can also tap **Notification** at the bottom of the Today screen to access the main screen of Wi-Fi Companion.

Alternatively, you can manually start the program by tapping:

Start | Programs | Wi-Fi Companion.



2. The main screen of Wi-Fi Companion will appear.



## STEP 5: Find a WLAN and Create a Profile

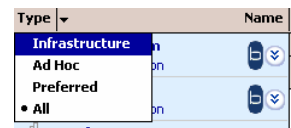
1. In the main screen of Wi-Fi Companion, tap on the tower icon, or tap Tools | Wi-Fi Finder.



2. Wi-Fi Finder will list WLANs detected in range. Tap on any WLAN in the list to view additional properties.

	Signal strength of strongest AP/ad hoc radio		Channel number
	WEP encryption, WPA (PSK), WPA (TKIP) or 802.1x		Profile saved
	No encryption		802.11b, 802.11g

If desired, tap on the **Type** or **Sort by** drop-down menus to change how the list is displayed. By default, **All** types are displayed, sorted by **Name**.  
If your WLAN is not listed, tap **Refresh**.



3. If Wi-Fi Finder cannot find your WLAN because its SSID is hidden, tap **New** to create a new profile for your network.

- If your WLAN has a profile (indicated by a folder icon), Wi-Fi Companion may have already connected to it, indicated by a tower icon with a green burst on top.



To connect to a WLAN with a profile, tap and hold your stylus on the WLAN in the list. In the pop-up menu, tap **Connect**.

- If your WLAN does not have a profile (no folder icon), tap and hold your stylus on the WLAN in the list, then tap **Get connected** to create a profile for the selected SSID.



### Creating a WLAN Profile

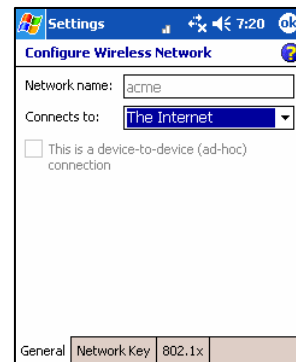
After you tap **New** or **Get connected** in Wi-Fi Finder, you will be directed to Wireless Zero Config (WZC), the wireless connection editor built into Windows Mobile, to create a WLAN profile. For help with WZC, please refer to your Pocket PC manual.

Enter the settings needed to connect to your network. Consult with your network administrator for help. For a Network Information Form you can send to your network administrator, refer to Appendix C.

- In the Configure Wireless Network screen, enter the **Network name (SSID)** if it isn't already provided. The SSID is case-sensitive.

**Connects to:**  
Select either **The Internet** or **Work**.

*Note: In most cases, you should select **The Internet**. For a VPN/proxy server, refer to your Pocket PC manual for instructions.*



2. Follow the appropriate instructions for your type of network to enter the necessary security settings.

### WPA Networks

#### ➤ Network Key tab

- **Authentication:** Select the correct WPA type, either WPA or WPA-PSK.

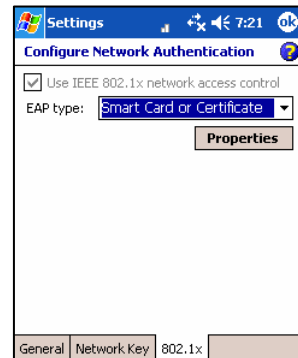
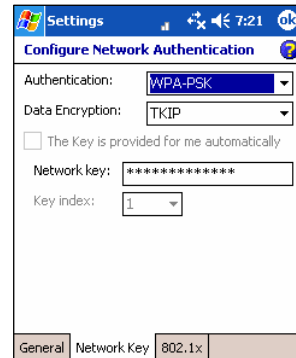
If using WPA-PSK, also enter the **Network key**. The key length must be either 64 hex or 8-63 ASCII characters.

- **Data Encryption:** Select TKIP.

#### ➤ 802.1x tab

- **Use IEEE 802.1x network access control:** Check.
- **EAP Type:** Select the type of EAP authentication used by your network, either PEAP or Smart Card or Certificate (EAP-TLS)

When done, tap ok.



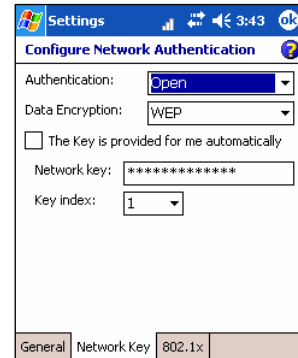
## 802.1x Networks

Depending on your Pocket PC 2003 version, your device may show two or three tabs at the bottom of the screen.

If your device shows three tabs, enter the following settings:

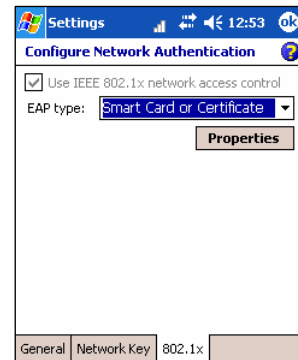
➤ Network Key tab

- **Authentication:** Select Open.
- **Data Encryption:** Select WEP.
- **The Key is provided for me automatically:** Check if the key is automatically provided, otherwise uncheck.



➤ 802.1x tab

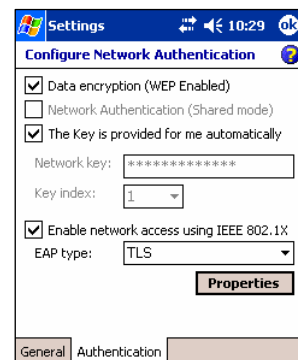
- **Use IEEE 802.1x network access control:** Check.
- **EAP Type:** Select the correct EAP type for your network, either PEAP or Smart Card or Certificate (EAP-TLS)
- When done, tap ok.



If your device shows two tabs, enter the following settings:

➤ Authentication tab

- **Data encryption (WEP Enabled):** Check.
- **Network Authentication (Shared mode):** Uncheck.
- **The key is provided to me automatically:** Check.
- **Enable network access using IEEE 802.1x.** Check. Select the correct EAP type for your network.
- When done, tap ok.



**Automatic Connection**

1. After you enter the necessary security settings and tap **OK**, your device will automatically try to connect.

You may see the Socket status icon at the top of your screen change from “networks available” to “networks out of range but configured.”



2. When your Pocket PC has connected, the following will occur:
  - Th







- e Socket status icon will change to 1-5 bars.
- The “x” will vanish from the connection icon.
- In Wi-Fi Finder, the WLAN will appear first in the list, showing a signal tower with a green burst on top.



*Note: After you save a profile for a WLAN, Wi-Fi Companion will automatically try to connect to it whenever you insert the WLAN card.*

3. Tap **OK** to view the main screen of Wi-Fi Companion.

Socket Status Icons

	Associated or Connected. Number of bars indicates signal strength.		Searching for networks.
	Networks available.		Networks out of range but configured.



Main Screen of Wi-Fi Companion

The screen content varies depending on your connection status.

The screenshot shows the main interface of the 'Wi-Fi Companion' utility. At the top, the title bar reads 'Wi-Fi Companion' and includes system icons for signal strength, Wi-Fi, volume, and time (4:52). The main content area displays information for a connected device named 'Pocket\_PC'. It shows the DHCP IP address as 216.31.250.160, with 43 packets sent and 1020 received. A yellow Wi-Fi signal icon is shown with 'WEP enabled.' and a key icon next to it. Below this, a blue box indicates a data rate of '11 Mbps'. At the bottom, the connection name 'socketcomm' is shown with a duration of 00:06:22, a 'Quality: Good' rating, and a MAC address of 00:a0:f8:39:be:eb. A signal strength indicator shows '43%' with a green antenna icon. A bottom navigation bar contains 'Tools Statistics About' and a keyboard icon. Annotations with arrows point to various elements: the top right status icons, the device name and statistics, the WEP status, the data rate, the signal strength indicator, and the bottom navigation bar.

Your device properties.

- Device name
- IP address
- Packets sent and received

The icon always appears regardless of connection status. Tap to view more IP addresses For P300/P500, also tap to turn the radio on/off.

Encryption status.  
Tap to access a certificate management utility for WPA or 802.1x if needed.

Socket status icon. Tap to access this screen from outside the utility.

Internet ready. Tap to access email, the Internet, ping or trace route. Icon appears only when Internet access is ready.

Data rate. Tap to view signal strength and data rate distribution.

Access point/remote device properties.

- SSID
- Connection duration
- Signal quality rating and percentage
- MAC address (also known as BSSID)
- Channel number (in black circle)

Tap for Wi-Fi Finder.

## 5 | Wi-Fi Companion

This chapter explains how to use the different features of Socket Wi-Fi Companion software.



The utility allows you to do the following:

- Turn wireless radio on/off
- View IP addresses
- Find networks
- Enable power save
- Ping
- Trace route
- Enroll a personal certificate for EAP-TLS
- Manage certificates
- View rates
- View graphs
- View tables
- View Help files

## Turn Wireless Radio On/Off

You may want to turn off the radio to save power or if you are entering an area with radio restrictions (e.g., on an airplane).

### Go Wi-Fi! P300, P300x, P500, P500x

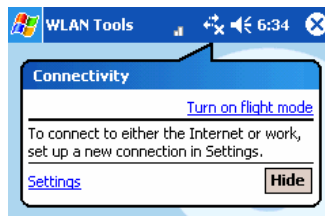
1. In the main screen of Wi-Fi Companion, tap and hold your stylus on the device icon. In the pop-up menu, tap **Turn Radio OFF**.



2. To turn the radio on again, tap on the device icon again and in the pop-up menu, tap **Turn radio ON**.

### Device with Built-in Radio

1. Tap on the connection icon (two arrows) at the top of your screen. In the bubble that appears, tap **Turn on flight mode**.



2. To turn the radio on again, tap on the connectivity icon (two arrows with an "x"). In the bubble that appears, tap **Turn off flight mode**.



## View IP Addresses



You can only view IP address data if the WLAN card is actively connected to a WLAN network.

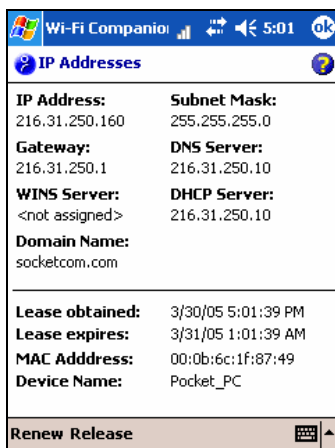
1. Whenever your device has connected to a WLAN, the main screen of Socket Wi-Fi Companion will display the device's IP address, labeled as either "DHCP" or "static." To view more comprehensive IP address information, do either of the following:

- Tap on the device icon.



- Tap Tools | IP Addresses.

2. The IP Addresses screen will appear, reporting Gateway, DNS server, DHCP server, and other IP address assignments.




*Note: Lease information appears only if a network uses DHCP.*

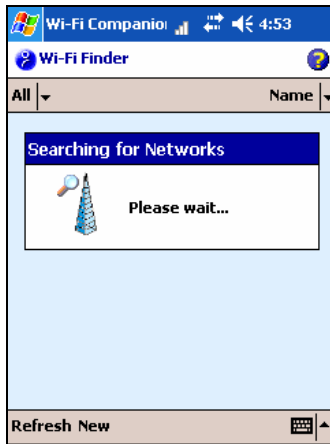
3. If your network uses DHCP, the **Renew** and **Release** functions will be enabled at the bottom of the screen.

- **Renew:** Tap to get a new IP address and/or to update related lease data.
- **Release:** Tap to release the IP address from the DHCP server.

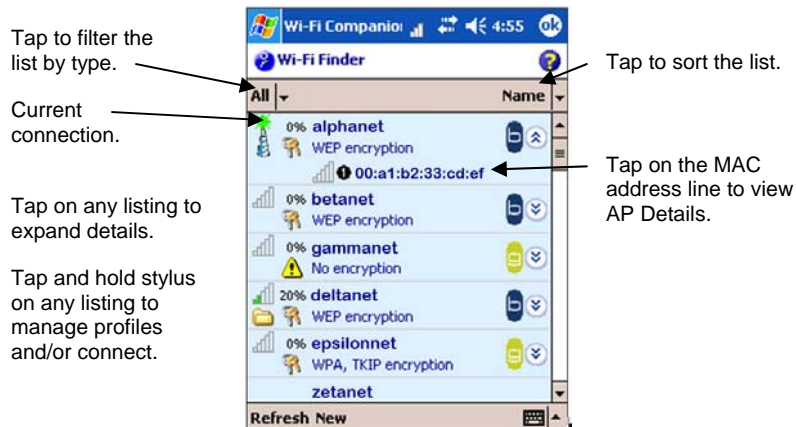
## Find Networks



1. In the Wi-Fi Companion main screen, tap on the signal tower icon.   
Alternatively, tap Tools | Wi-Fi Finder.

2. The WLAN card will begin searching for networks in range.

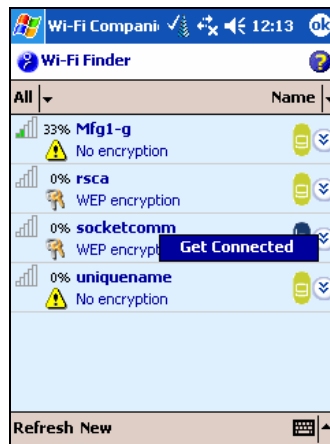


3. After the search, a list of discovered networks will be displayed.



	Signal strength of strongest AP/ad hoc radio		Channel number
	WEP encryption, WPA (PSK), WPA (TKIP) or 802.1x		Profile saved
	No encryption		802.11b, 802.11g

4. If desired, you can perform a variety of functions in the Show Networks screen:
  - To begin another search for networks in range, tap **Refresh**.
  - To configure network profiles, tap on a WLAN in the list. In the pop-up menu, tap **Get Connected** if no profile exists yet, or tap **Edit Profile** if a profile has already been saved for the WLAN .



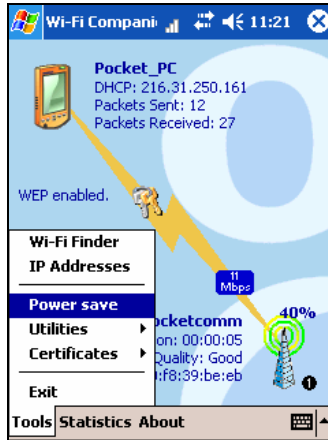
This will direct you to the Configure Wireless Networks screen of Wireless Zero Config.

5. To exit Wi-Fi Finder, tap **ok**.

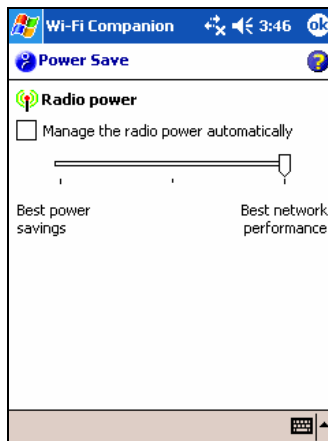
## Enable Power Save

Socket Wi-Fi Companion offers both automatic and manual power management for the WLAN card.

1. In the main screen of Wi-Fi Companion, tap **Tools | Power save**.



2. The Power Save screen will appear. If desired, check the box **Manage the radio power automatically** for automatic power management. Wi-Fi Companion will enable best performance when charging and best power savings when running on batteries.



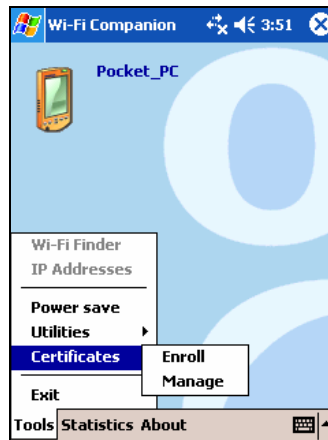
Otherwise, uncheck the box and use the slider to manually choose your power setting.

3. Tap **ok**.

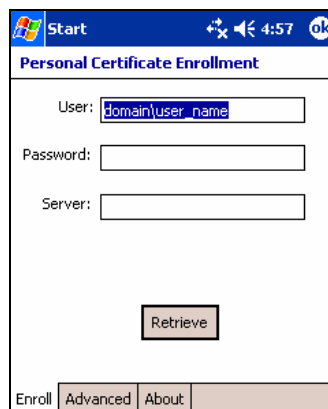
## Install Personal Certificate for EAP-TLS

Socket Wi-Fi Companion a quick link to the Cert Enroll utility, which helps you install a personal certificate, required to connect to 802.1x networks running EAP-TLS authentication.

1. In the main screen of Wi-Fi Companion, tap Tools | Certificates | Enroll.



2. The Personal Certificate Enrollment screen will appear. For help using the utility, please refer to Chapter 3.





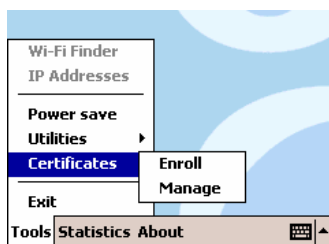
## Manage Certificates

Windows Mobile includes a built-in utility for managing authentication certificates for WPA, AES, and 802.1x networks. Socket Wi-Fi Companion provides quick links to Microsoft's certificate management utility.

1. In the main screen of Socket Wi-Fi Companion, you can quickly access the Microsoft certificate management utility by either of two methods:
  - If the card is currently connected to a WLAN, the security status icon will appear as a pair of keys if the correct security settings have been configured, otherwise an error symbol will appear. Tap on the icon.



- Tap Tools | Certificates | Manage.



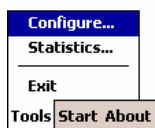
2. The Manage Certificates utility will appear. For help installing certificates for WPA or 802.1x, refer to Chapters 3. For more information about the certificate management utility, refer to your Pocket PC manual.



## Ping

Use Ping to perform an ICMP ping to another address on the network. Ping is useful as a diagnostic tool to establish Layer 3 connectivity to another network node. In the continuous ping mode, it can also be used as a site survey tool to determine the edge of WLAN range or to look for spots with no coverage (dead spots).

1. In the main screen of Wi-Fi Companion, tap **Tools | Utilities | Ping**.
2. The Ping screen will appear. Tap **Tools | Configure**.

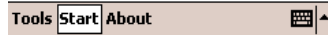


3. In the Configure Ping screen, enter the appropriate settings:



- **Address:** Enter a target address in the form of an IP address or a URL that can be resolved by a Domain Name System (DNS). For convenience, the last address used is the default, and the drop-down list shows prior addresses used.
- **Size:** Select a packet size, from 32 bytes up to 65550.
- **Content:** Select the packet payload data — either **All 00**, **All FF** (hexadecimal), or **Random**.
- **Repeat:** Select a repeat number of pings, from a minimum of 5 to a maximum of **Continuous**.
- **Verify Data:** Select either **Yes** or **No**.
- Tap **ok**.

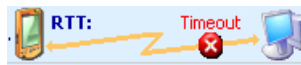
- The main Ping screen will reappear. Tap **Start**.



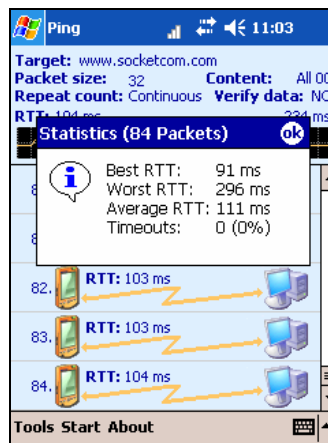
- The ping test will begin. For each successful ping, the Roundtrip Time (RTT) will be shown. A line graph will display the series of RTTs for the last 24 pings.



If a ping is not successful within 2 seconds, a timeout will be displayed.



- To stop the test, tap **Stop**. A prompt will report statistics of the test results. View the statistics and tap **ok**.



To view the statistics again, tap **Tools | Statistics**.

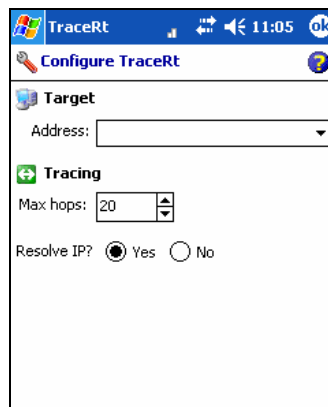
## Trace Route

The Trace Route tool traces a packet from the Pocket PC to an Internet host, showing each hop and how long it takes to reach the destination. This allows the user to figure out where the longest delays are occurring if performance appears slow.

1. In the main screen of Wi-Fi Companion, tap **Tools | Utilities | Trace Route**.
2. The Trace Route screen will appear. Tap **Tools | Configure**.

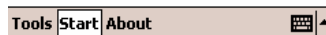


3. In the Configure Trace Route screen, enter the appropriate settings:



- **Address:** Enter a target address in the form of an IP address or a URL that can be resolved by a Domain Name System (DNS). For convenience, the last address used is the default, and the drop-down list shows prior addresses used.
- **Max hops:** Select the maximum number of hops (default is 20).
- **Resolve IP:** Indicate whether you want to resolve the IP address from a URL (default is Yes).
- Tap **ok**.

4. In the main Trace Route screen, tap **Start**.



- The Trace Route test will begin. For each successful hop, the hop time, host name and IP address are shown. Tap **Stop** to stop the trace at any time, or let the trace run until it is complete.

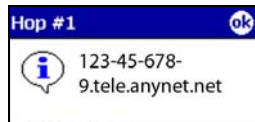


- When the trace is complete, the Statistics dialog box will report the best hop, worst hop, average hop, and number of timeouts. Tap **Ok** to close the box.



To view the statistics again, tap **Tools | Statistics**.

To view the full host name for any of the hops, simply tap on the hop in the list.



## View Rates



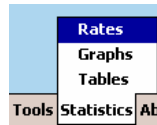
*Note: You can only view statistical rate information if the WLAN card is actively connected to a WLAN network.*

1. Whenever your device has connected to a WLAN, the main screen of Wi-Fi Companion will display the connection's data rate. To view more comprehensive data rate information, do either of the following:

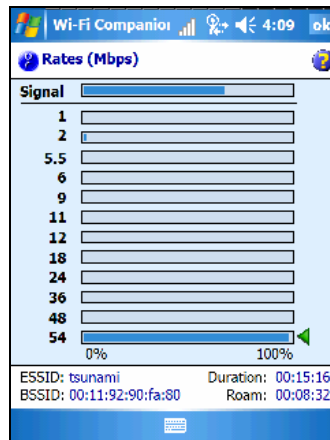
- Tap on the data rate icon.



- Tap Statistics | Rates.



2. The Rates screen will appear, reporting the current signal strength, signal quality, and a history of the relative number of packets sent at the 12 possible 802.11b/g connection speeds. Additionally, the screen shows the current BSSID and connection duration.



*The green arrow indicates the current network speed.*

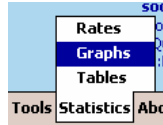
3. By default, the Pocket PC will refresh the rate information every second. To configure the refresh rate to something different, tap **Configure** at the bottom of the screen.

## View Graphs



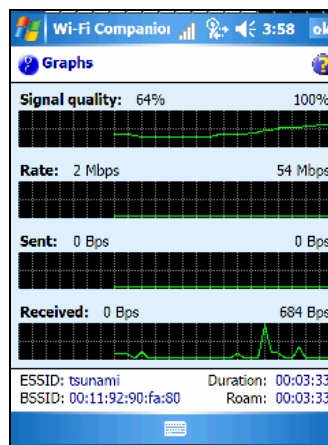
You can only view the statistical graphs if the WLAN card is actively connected to a WLAN network.

1. In the main screen of Wi-Fi Companion, tap **Statistics | Graphs**.



2. The Graphs screen will appear, displaying scrolling line graphs of the signal quality, rate, and sent and received data rates.

*Note: Square screen devices will only show the signal quality and sent and received data rates.*



Two numbers are reported with each graph: the current value (displayed on the left side, after the graph title) and the maximum value (displayed on the far right). For the Sent and Received graphs, the maximum value may change.

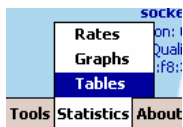
3. By default, the Pocket PC will refresh the graph information every second. To configure the refresh rate to something different, tap **Configure** at the bottom of the screen.

## View Tables



You can only view the statistical tables if the WLAN card is actively connected to a WLAN network.

1. In the main screen of Wi-Fi Companion, tap **Statistics | Tables**.



2. The Tables screen will appear, displaying a table of comprehensive information about the current connection.

The table is divided into five screens: IP, TCP, UDP, ICMP, and Interface. Almost all of the information presented in the tables relates to performance and error counts.

Name	Current
Datagram send requests	133779
Datagrams received	112731
Received datagrams delivered	112682
Default TTL	128
Reassemble timeout	60
Received address errors	49
Datagrams with no route	13
Routes in routing table	13
Interfaces on computer	3
IP Addresses on this computer	3
Forwarding enabled	2
Received header errors	0

BSSID: 00:a1:b2:33:cd:cd Duration: 15:39:58

IP TCP UDP ICMP Interface

Reset Refresh

Tap on a column header to sort the data.


**Reset:** Tap to reset the contents of the Current column to zero.

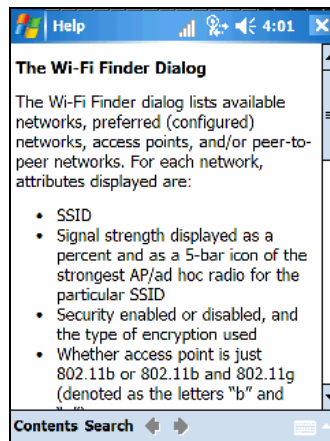
**Refresh:** Tap to refresh the data of the open table. By default, the data will refresh every time you open a new table (e.g., when you switch between the different tabs).



## View Help Files

There are two ways to access Help files for Socket Wi-Fi Companion.

- To view a list of all the Help files, make sure Socket Wi-Fi Companion is running and tap **Start | Help**.
- To view a Help file for the screen of Socket Wi-Fi Companion that is currently open, tap on the Help button . Except for the main screen, all screens of Socket Wi-Fi Companion feature a Help button.



# Appendix A

## Specifications

### Go Wi-Fi! E300 (802.11b SD card)

*Physical Characteristics:*

**Card Dimensions:** 1.57 x 0.94 x 0.08 in (40 x 24 x 2.1 mm)

**Total Weight:** 0.1 oz (4 g)

**Operating Temperature:** +14 to +158 °F (0 to +70 °C)

**Storage Temperature:** -22 to +176 °F (-30 to +80 °C)

*Power Consumption (3.3 V Supply):*

**Transmission:** 187 mA

**Receive:** 146 mA

**Power-Saving Idle (listening):** 15.8 mA

**Power-Saving Sleep:** 0.92 mA

*Hardware Support:*

- Pocket PC running Windows Mobile 5.0 with SDIO slot
- Pocket PC running Windows Mobile 2003/2003SE with SDIO slot and SDIO *Now!* software from BSQUARE in ROM
- For information about support for MontaVista Linux and Real-Time Operating Systems (RTOS), please submit an online inquiry to Socket Development Services at [www.socketmobile.com/contact/note\\_contact.asp?EmailID=4&Status=Sales&Product=WiFi](http://www.socketmobile.com/contact/note_contact.asp?EmailID=4&Status=Sales&Product=WiFi)

*Compatible Processors:*

- Intel XScale
- Samsung MIPS
- Texas Instruments OMAP

*Interface Standards:* SDIO

*Standards Conformance:*

Wi-Fi Certified — Enterprise Edition

Meets 802.1x requirements

SDIO 1.1

**Transmit Power Output:** 32 mW nominal, 40 mW maximum

***Receiver Sensitivity:***

1 Mbps: -91 dBm  
11 Mbps: -83 dBm

***Data Rate:***

Complies with 802.11b specification to provide data rates up to 11 Mbps, with range and throughput optimized by Dynamic Rate Scaling to 5.5, 2, and 1 Mbps

***Frequency Range:*** 2.4-2.5 GHz band

***Range:***

**Indoors:** Approx. 300 feet (100 m) (typical office environment)  
**Outdoors:** Approx. 1,000 feet (300 m)

***Access Protocol:*** Carrier Sense Multiple Access with Collision Avoidance Protocol (CSMA/CA)

***Security Encryption/Authentication Hardware Support:***

40/64-bit and 128-bit WEP data encryption  
802.1x with EAP-TLS or PEAP  
Wi-Fi Protected Access (WPA), WPA with Pre-Shared Key (WPA-PSK)

***Software Included:*** Socket WLAN CD

***Hardware Warranty:*** Three years

***Certification/Compliance:***

FCC: Part 15, subpart C  
Industry Canada RSS210  
Europe: CE Mark, R&TTE Directive  
Australia: C-Tick

## Go Wi-Fi! E500 (802.11b CF card)

### *Physical Characteristics:*

**CF Type I Size:** 56.6 x 42.8 x 3.3 mm

**Total Weight:** 13.6 g

**Operating Temperature:** 32 to 158 °F (0 to 70 °C)

**Storage Temperature:** +5 to 185 °F (-15 to +85 °C)

### *Power Consumption (3.3 V Supply):*

**Idle (listening):** <20 mA

**Transmission:** 265 mA

### *Interface Standards:*

**CompactFlash Interface:** CompactFlash Type I

**With CompactFlash-to-PC Card Adapter:** PCMCIA, Type II

### *Standards Conformance:*

Wi-Fi Certified — Enterprise Edition

Meets 802.1x requirements

CompactFlash Spec. 2.0

**Output Power:** 40 mW maximum

**Data Rate:** Complies with 802.11b specification to provide data rates up to 11 Mbps, with range and throughput optimized by Dynamic Rate Scaling to 5.5, 2, and 1 Mbps

**Frequency Range:** U.S., Europe, and Japan product covering 2.4-2.5 GHz, programmable for different country regulations

**Range:** Approx. 300 feet (100 m) (typical office environment)

**Access Protocol:** Carrier Sense Multiple Access with Collision Avoidance Protocol (CSMA/CA)

### *Security Encryption/Authentication Hardware Support:*

40-bit and 128-bit WEP data encryption

802.1x with EAP-TLS or PEAP

Wi-Fi Protected Access (WPA), WPA-PSK (Pre-Shared Key)

### *Operating System Support:*

Windows Mobile 2003, 2003SE and 5.0

**Software Included:** Installation CD

**Warranty:** **CompactFlash Card:** Three years

***Certification/Compliance:***

FCC: Part 15, subpart C  
ETS 300 328  
ETS 300 826

***TX Maximum Radiated EIRP:***

U.S.: FCC Part 15.247  
Europe: ETS 300 328  
Canada: IC RSS210

***TX Out-of-Band Emissions:***

U.S.: FCC Part 15.247, 15.205, 15.209  
Europe: ETS 300 328

## Go Wi-Fi! P300/P300x (802.11b/g SD card)

### *Physical Characteristics:*

**Card Dimensions:** 1.57 x 0.94 x 0.08 in (40 x 24 x 2.1 mm)

**Total Weight:** 226.8 g

**Operating Temperature:** +32 to +158 °F (0 to +70 °C)

**Storage Temperature:** +5 to +185 °F (-20 to +85 °C)

### *Power Consumption (3.3 V Supply):*

**Idle:** <20 mA (estimated)

**Transmission:** 265 mA (peak)

### *Hardware Support:*

- Pocket PC running Windows Mobile 5.0 with SDIO slot
- Pocket PC running Windows Mobile 2003/2003SE with SDIO slot and SDIO *Now!* software from BSQUARE in ROM
- For information about support for MontaVista Linux and Real-Time Operating Systems (RTOS), please submit an online inquiry to Socket Development Services at [www.socketmobile.com/contact/note\\_contact.asp?EmailID=4&Status=Sales&Product=WiFi](http://www.socketmobile.com/contact/note_contact.asp?EmailID=4&Status=Sales&Product=WiFi)

*Interface Standards:* SDIO 1.1 or greater

### *Standards Conformance:*

Wi-Fi Certified — Enterprise Edition

Meets 802.1x requirements

WPA-2 Enterprise (certification pending)

CCX v1/v2

IEEE 802.11b and 802.11g

### *Transmit Power Output:*

CCK: 13 dBm (typical)

OFDM: 15 dBm (typical)

### *Tx Maximum Radiated:*

**CCK:** 15 dBm (estimated)

**EIRP:** 15 dBm (estimated)

### *Data Rate:*

**802.11g:** Data rate dynamically shifts between 54, 48, 36, 24, 18, 12, 9 and 6 Mbps based on signal strength, for maximum availability and reliability of connection. OFDM with BPSK, QPSK, 16-QAM and 54-QAM (at 6/9, 12/18, 24/36, and 48/54 Mbps, respectively)

**802.11b:** Data rate dynamically shifts between 11, 5, 5M, 2M, and 1 Mbps based on signal strength, for maximum availability and reliability of connection. (802.11g: DSSS with BPSK, QPSK, and CCK (at 1,2, and 5.5/11 Mbps, respectively))

***Frequency Range:***

**North America:** 2.412-2.462 GHz, channels 1-11

**Europe ETSI:** 2.412-2.472 GHz, channels 1-13

**Japan:** 2.412-2.484 GHz, channels 1-14

***Indoor Range:*** Approx. 300 ft (100 m) (typical office environment)

***Access Protocol:*** Carrier Sense Multiple Access with Collision Avoidance Protocol (CSMA/CA)

***Security Encryption/Authentication Hardware Support:***

40/64-bit and 128-bit WEP data encryption

802.1x with EAP-TLS or PEAP

Wi-Fi Protected Access (WPA), WPA with Pre-Shared Key (WPA-PSK)

AES, WPA2

***Software Included:*** Socket WLAN CD

***Hardware Warranty:*** Three years

***Certification/Compliance:***

FCC: Part 15, Subpart C

Industry Canada RSS210

Europe: CE: EN 300 328, EN 301 489-17

TELECOM: pending

## Go Wi-Fi! P500/P500x (802.11b/g CF card)

### *Physical Characteristics:*

**CF Type I Size:** 56.1 x 42.8 x 3.3 mm)

**Total Weight:** 13.6 g

**Operating Temperature:** 32 to 158 °F (0 to 70 °C)

**Storage Temperature:** +5 to 185 °F (-20 to +85 °C)

### *Power Consumption (3.3 V Supply):*

**Idle:** <20 mA (estimated)

**Transmission:** 265 mA (peak)

### *Transmit Power:*

**CCK:** 13 dBm typical

**OFDM:** 15 dBm typical

### *Interface Standards:*

**CompactFlash Interface:** CompactFlash Type I

**With CompactFlash-to-PC Card Adapter:** PCMCIA, Type II

### *Standards Conformance:*

Wi-Fi Certified — Enterprise Edition

Meets 802.1x requirements

WPA2-Enterprise (certification pending)

CCX v1/v2 (certification pending)

IEEE 802.11b and 802.11g

CompactFlash Spec. 2.0

**802.11g:** Data rate dynamically shifts between 54, 48, 36, 24, 18, 12, 9 and 6 Mbps based on signal strength, for maximum availability and reliability of connection. OFDM with BPSK, QPSK, and CCK (at 1, 2, and 5/11 Mbps, respectively)

**802.11b:** Data rate dynamically shifts between 11, 5, 2, and 1 Mbps based on signal strength, for maximum availability and reliability of connection. DSSS with BPSK, QPSK, 16-QAM and 54-QAM (at 6/9, 12/18, 24/36, and 48/54 Mbps, respectively)

### *Frequency Range:*

North America: 2.412-2.462 GHz, channels 1-11

Europe ETSI: 2.412-2.472 GHz, channels 1-13

Japan: 2.412-2.484 GHz, channels 1-14

Programmable for different country regulations

**Indoor Range:** Approx. 300 feet (100 m) (typical office environment)



**Access Protocol:** Carrier Sense Multiple Access with Collision Avoidance Protocol (CSMA/CA)

**Operating System Support:**  
Windows Mobile 2003, 2003SE and 5.0

For information about support for MontaVista Linux, Real Time Operating Systems (RTOS), Linux 2.4/2.6, uITRON or ThreadX, please submit an online inquiry to Socket Development Services at:  
[www.socketmobile.com/contact/note\\_contact.asp?EmailID=4&Status=Sales&Product=WiFi](http://www.socketmobile.com/contact/note_contact.asp?EmailID=4&Status=Sales&Product=WiFi)

**Software Compatibility:** Windows COM port

**Software Included:** Installation CD

**Warranty:** **CompactFlash Card:** Three years

**Certification/Compliance:**  
FCC: Part 15, subpart C  
CE: EN 300 328, EN 301 489-17  
Industry Canada: RSS210  
Telec

**TX Maximum Radiated EIRP:**  
**CCK:** 15 dBm (estimated)  
**OFDM:** 17 dBm (estimated)

# Appendix B

## Safety and Usage Tips

Please observe these Safety and Usage Tips while using Socket Go Wi-Fi!

### **Product Care**

- Do not expose this product to liquid, moisture or extreme humidity.
- Do not expose this product to extreme high or low temperatures.
- Do not drop, throw or try to bend this product, as rough treatment could damage it.
- Do not attempt to disassemble this product - a broken seal will void the warranty. The product does not contain consumer serviceable components. Should your Go Wi-Fi! need service, please contact Socket technical support at: [www.socketmobile.com/prodreg](http://www.socketmobile.com/prodreg). After registering your product, log in, click on the Technical Support tab, and click New Trouble Ticket.
- Treat this product with care. Keep in a clean, dry and dust-free place.
- Changes or modifications of this product, not expressly approved by Socket, may void the user's authority to operate the equipment.

### **Antenna Care**

Do not place a metallic shield around your Go Wi-Fi! card since it will reduce the radio transmission efficiency.

### **Efficient Use**

For optimum performance, please make sure that there is no metallic surrounding your Go Wi-Fi! card.

### **Driving**

RF energy may affect some electronic systems in motor vehicles, such as car stereo, safety equipment, etc. Check with your vehicle manufacturer's representative to be sure that your Go Wi-Fi! card will not affect the electronic system in your vehicle.

### **Aircraft**

- Turn off the Go Wi-Fi! before boarding any aircraft.
- To prevent interference with communications systems, you must not use your Go Wi-Fi card while the plane is in the air.
- Do not use it on the ground without permission from the crew.

**Radio Frequency Exposure**

Your Go Wi-Fi! is a radio transmitter and receiver. When in operation, it communicates with 802.11b-equipped devices by receiving and transmitting radio frequency (RF) magnetic fields in the frequency range 2.4 to 2.5 GHz. The maximum output power of the radio transmitter is less than 75 mW.

The Go Wi-Fi! unit is designed to be in compliance with the RF exposure limits set by national authorities and international health agencies when installed or used separately from other antennas or radio transmitters.

Operation of this device excludes body-worn holsters, belt clips, or similar operating configurations, as described in the FCC filing.

# Appendix C

## Network Information

Consult with your network administrator, or have them complete this form.

1. What is the network's wireless network name, known as SSID?

---

*Note: The name is case-sensitive, maximum length 32 characters.*

2. What type of security does your WLAN use? Check one of the boxes A-F below.

- A  Open System (no settings needed, proceed to Question 4)
- B  WEP-40
- C  WEP-128
- D  WPA-PSK
- E  WEP-PEAP
- F  WEP-EAP/TLS

3. If you checked B, C, D, E or F, please provide the necessary settings.

[B] What is the WEP-40 key?

40-bit (10 characters): \_\_\_\_\_

[C] What is the WEP-128 key? What is the key index?

128-bit (26 characters):

\_\_\_\_\_

Key index: 1, 2, 3 or 4

[D] What is the WPA-PSK key? What is the key format?

Key: \_\_\_\_\_

Key Format:

Hexadecimal. Key length must be 64 characters.

ASCII. Key length must be 8-63 characters.

[E-F] 802.1x Authentication only

***IMPORTANT! Get the required authentication certificate(s) from your network administrator!***

Specify the following 802.1x settings:

WEP key:  The WEP key is provided automatically

I must enter the WEP key and key index

WEP Key: \_\_\_\_\_

Key index: 1, 2, 3 or 4

Authentication:  EAP-TLS *May appear as "Smart Card or Certificate" in configuration menu.*

PEAP

User name: \_\_\_\_\_ Server: \_\_\_\_\_  
(network login) (certificate server)

Password: \_\_\_\_\_ Domain: \_\_\_\_\_

4. Does the network require that you use a static IP address?

**NO.** If *No*, then you do not need any of the settings below.

**YES.** If *Yes*, then please specify the following:

(a) Mobile Computer IP address: \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_

(b) Subnet Mask: \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_

(c) Gateway: \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_

(d) DNS: \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_

(e) WINS\*: \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_ . \_\_\_\_\_

***\*For Remote ActiveSync Only:*** If your server does NOT have use WINS services, use the IP address of the host PC instead of a WINS address.

## Appendix D

# Troubleshooting

**SYMPTOM:** My device does not recognize the card after I insert it.

POSSIBLE REASONS	SOLUTION
The card driver was not installed or installed incorrectly.	Install the software properly.

**SYMPTOM:** The Socket status icon doesn't appear after I insert the card into my Pocket PC.

POSSIBLE REASONS	SOLUTION
Your mobile computer may be frozen.	Remove the WLAN Card. Soft reset the device by pressing the reset button.
The WLAN card may not be properly aligned in the card slot.	Remove and carefully re-insert the card in the slot.

**SYMPTOM:** My device is not receiving a valid IP address.


POSSIBLE REASONS	SOLUTION
The DHCP request was not successful in receiving an IP address	Remove and reinsert the card or soft reset the mobile computer.
The SSID may be incorrect.	Check and re-enter the SSID. It is case-sensitive. Alternatively, try using an SSID of "any".
In Infrastructure operating mode, WEP encryption may not match access point settings.	Check with your company IT department to confirm access point security settings.

**SYMPTOM:** My device does not associate with an access point known to be within range.

POSSIBLE REASONS	SOLUTION
The SSID may be incorrect.	Check and re-enter the SSID. Try using an SSID of "any".
In Infrastructure operating mode, WEP encryption may not match access point settings.	Check with your company IT department to confirm access point security settings.
AP may require short preamble.	Change access point to long preamble.

# Appendix E

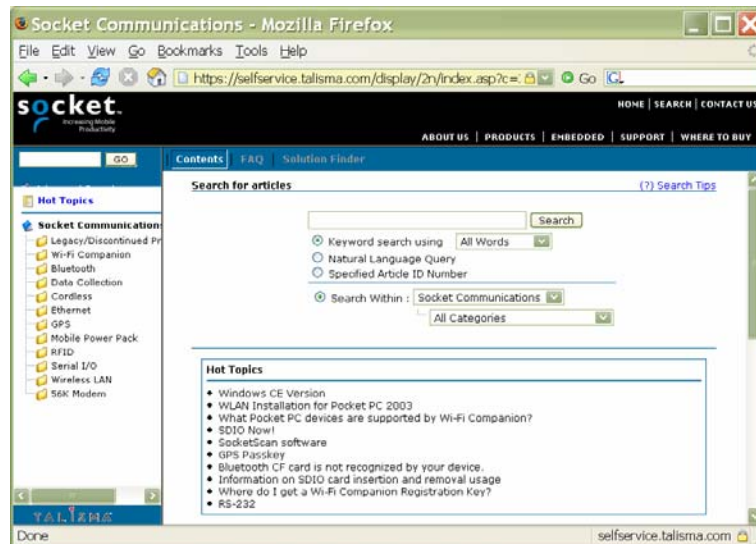
## Technical Support

If you have trouble using the WLAN software, tap **Start | Help** to view Help files. For Wi-Fi Companion, you can also tap the Help button  for information about the open screen.

If you need further assistance with Wi-Fi Companion or the Go Wi-Fi! card, Socket has two technical support resources to help you. Please note that support is available only in English.

### Socket On-Line Support

Socket On-Line Support (SOS) is an interactive technical support program and is the best place to start for technical support. To access SOS, go to: [www.socketmobile.com/support](http://www.socketmobile.com/support). Click on the SOS icon.

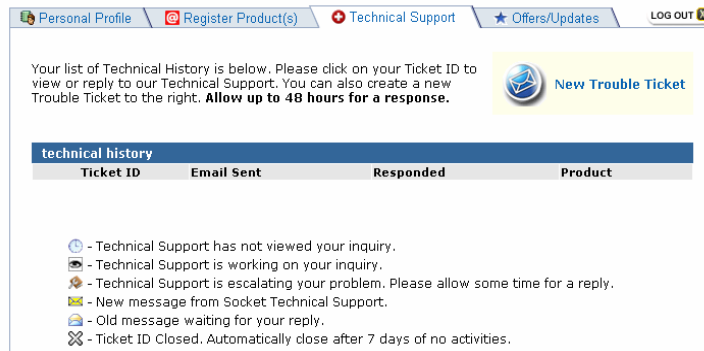


## Technical Support

### IMPORTANT!

To obtain live technical support, you must first register your product online at [www.socketmobile.com/prodreg](http://www.socketmobile.com/prodreg). You must register at this general registration website even if you already registered at [www.socketmobile.com/wfc](http://www.socketmobile.com/wfc).

After product registration, log in. Click on the Technical Support tab. Click Trouble Ticket to submit an online inquiry for technical support. You can log in anytime to track the progress of your request. If we cannot resolve your inquiry online, we can arrange for a support engineer to call you at a specific time.



Personal Profile Register Product(s) Technical Support Offers/Updates LOG OUT

Your list of Technical History is below. Please click on your Ticket ID to view or reply to our Technical Support. You can also create a new Trouble Ticket to the right. Allow up to 48 hours for a response.

New Trouble Ticket

technical history			
Ticket ID	Email Sent	Responded	Product

🕒 - Technical Support: has not viewed your inquiry.  
👤 - Technical Support is working on your inquiry.  
🗨️ - Technical Support is escalating your problem. Please allow some time for a reply.  
✉️ - New message from Socket Technical Support.  
🗨️ - Old message waiting for your reply.  
🚫 - Ticket ID Closed. Automatically close after 7 days of no activities.

**802.1x only:** If you have trouble connecting to an 802.1x network, ask your network administrator for the event log and access point log, if supported. Send the log(s) to Socket technical support with your request for help..



## Limited Warranty

Socket Communications Incorporated (Socket) warrants this product against defects in material and workmanship, under normal use and service, for the following period from the date of purchase:

Plug-in card: Three years

Incompatibility is not a defect covered by Socket's warranty. During the warranty period, Socket will, at its option, repair or replace the defective product at no charge when furnished with proof of retail purchase, provided that you deliver the product to Socket or to an authorized Socket Service Center.

The returned product must be accompanied by a return material authorization (RMA) number issued by Socket or by Socket's Authorized Service Center. If you ship the product, you must use the original container or equivalent and you must pay the shipping charges to Socket. Socket will pay surface shipping charges back to any location in the contiguous United States. This warranty applies only to the original retail purchaser and is not transferable.

Socket may, at its option, replace or repair the product with new or reconditioned parts and the returned product becomes Socket's property. Socket warrants the repaired or replaced products to be free from defects in material or workmanship for ninety (90) days after the return shipping date, or for the remainder of the original warranty period, whichever is greater.

This warranty does not cover the replacement of products damaged by abuse, accident, misuse or misapplication, nor as a result of service or modification other than by Socket.

**SOCKET IS NOT RESPONSIBLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, INCLUDING DAMAGE TO PROPERTY AND, TO THE EXTENT PERMITTED BY LAW, DAMAGES FOR PERSONAL INJURY. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**

Some states do not allow limitation of implied warranties, or the exclusion or limitation of incidental or consequential damages, so that the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

This product may contain fully tested, recycled parts, warranted as if new.

For warranty information, email [support@socketmobile.com](mailto:support@socketmobile.com).

## Limited Software Warranty

**LIMITED WARRANTY.** SOCKET warrants that the original disk or CD ROM is free from defects for 90 days from the date of delivery of the SOFTWARE.

**CUSTOMER REMEDIES.** SOCKET'S entire liability and your exclusive remedy shall be, at SOCKET'S option, either (a) return of the price paid or (b) replacement of the SOFTWARE which does not meet SOCKET'S Limited Warranty and which is returned to SOCKET with a copy of your receipt. Any replacement SOFTWARE will be warranted for the remainder of the original warranty period or 30 days, whichever is longer. THESE REMEDIES ARE NOT AVAILABLE OUTSIDE OF THE UNITED STATES OF AMERICA.

**NO OTHER WARRANTIES.** SOCKET disclaims all other warranties, either express or implied, including but not limited to implied warranties of merchantability and fitness for a particular purpose, with respect to the SOFTWARE and the accompanying written materials. This limited warranty gives you specific legal rights. You may have others which vary from state to state.

**NO LIABILITY FOR CONSEQUENTIAL DAMAGES.** In no event shall SOCKET or its suppliers be liable for any damages whatsoever (including, without limitation, damages for loss of business profits, business interruption, loss of business information, or other pecuniary loss) arising out of the use of or inability to use the SOFTWARE, even if SOCKET has been advised of the possibility of such damages. Because some states do not allow the exclusion or limitation of liability for consequential or incidental damages, the above limitation may not apply to you.

**EXPORT LAW ASSURANCES.** You may not use or otherwise export or reexport the SOFTWARE except as authorized by United States law and laws of the jurisdiction in which the SOFTWARE was obtained. In particular, but without limitation, none of the SOFTWARE may be used or otherwise exported or reexported (a) into (or to a national or resident of) a United States embargoed country or (b) to anyone on the U.S. Treasury Department's list of Specially Designated Nationals or the U.S. Department of Commerce's Table of Denial Orders. By using the SOFTWARE, you represent and warrant that you are not located in, under control of, or a national or resident of any such country or on any such list.

**GOVERNMENT END USERS.** If the SOFTWARE is supplied to the U. S. Government, the SOFTWARE is classified as "restricted computer software" as defined in clause 52.227-19 of the FAR. The U. S. Government's rights to the SOFTWARE are as provided in clause 52.227-19 of the FAR.

**CONTROLLING LAW AND SEVERABILITY.** This License shall be governed by the laws of the United States and the State of California. If for any reason a court of competent jurisdiction finds any provision, or portion thereof, to be unenforceable, the remainder of this License shall continue in full force and effect.

## Regulatory Compliance for Go Wi-Fi!

Socket Go Wi-Fi! is designed to be compliant with the rules and regulations in locations where they are sold and will be labeled as required. This product is type approved users are not required to obtain license or authorization before using.

### Radio Frequency Interference Requirements

This device complies with part 15 of the FCC rules. Operation is subject to the following 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.

CAUTION: Changes or modifications to the device not expressly approved by Socket Communications can void the user's authority to operate the equipment.

This equipment is also ETS 300 328 and ETS 300 826 compliant. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his or her own expense.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user may try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna of the radio or television.
- Increase the distance separating the equipment and the receiver.
- Connect the equipment to an outlet on a different branch circuit than that of the receiver.
- Consult the dealer or an experienced radio/TV technician for help.

The user may find the following booklet helpful:

*How to Identify and Resolve Radio-TV Interference Problems*

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402.

## Antenna Co-location Instructions

The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

## **Radio Frequency Interference Requirements – Canada**

This Class B digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations. Cet appareil numérique de la Classe B respecte toutes les exigences du Règlement sur le Matériel Brouilleur du Canada.

*NOTE: This device has been tested and complies with FCC, CE and IC radio-frequency (RF) exposure limits for body-worn operation. SAR compliance for body-worn operation has been established for PDA configurations with a CompactFlash slot and a 1.0 cm minimum separation distance between the WLAN Card and the user's body. In order to comply with FCC, CE and IC RF exposure requirements for body-worn operation, this device must be used with a PDA utilizing a body-worn accessory that contains no metallic components and maintains a minimum separation distance of 1.0 cm between the WLAN Card and the user's body. This device has not been evaluated for RF exposure compliance with any Smartphone or PDA with built-in phone capability that enables use of this device to be held and transmitting next to the head. This device must not be co-located or operating in conjunction with any other antenna or transmitter.*

## **CE Marking & European Union Compliance**

Products intended for sale within the European Union are marked with a CEMark which indicates compliance to applicable Directives and European Normes (EN), as follows. Amendments to these Directives or ENs are included: Normes (EN), as follows:

### ***Applicable Directives:***

- Electromagnetic Compatibility Directive 89/336/EEC
- Low Voltage Directive 73/23/EEC

### ***Applicable Standards:***

- EN 300 328 v1.6.1 2004-11 Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2.4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
- EN 301 489-17 v1.2.1 2002-08 Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for 2,4 GHz wideband transmission systems and 5 GHz high performance RLAN equipment
- EN 301 489-17 v1.11 (2000-09) Specified Conditions for Wideband Data and HIPERLAN Equipment

- EN61000-4-2: 1995 – Electrostatic Discharge
- EN61000-4-3: 1996 – Radiated Electromagnetic Field
- ANSI C95.1 Safety Levels with Respect to Human Exposure to RF  
Electromagnetic Fields 300 KHz to 300 GHz

### **Product Disposal**

Your device should not be placed in municipal waste. Please check local regulations for disposal of electronic products.

