SpeedTouch 180
Wireless Access Point

COMPLIANCES

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna

- Increase the separation between the equipment and receiver

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected

- Consult the dealer or an experienced radio/TV technician for help

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IMPORTANT NOTE

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The equipment version marketed in US is restricted to usage of the channels 1- 11 only.

EC Conformance Declaration - Class B

This information technology equipment complies with the requirements of the Council Directive 89/336/EEC on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility and 73/23/EEC for electrical equipment used within certain voltage limits and the Amendment Directive 93/68/EEC. For the evaluation of the compliance with these Directives, the following standards were applied:

RFI Emission:	• Limit class B according to EN 55022:1998
	• Limit class B for harmonic current emission according to EN 61000-3-2/1995
	• Limitation of voltage fluctuation and flicker in low-voltage supply system according to EN 61000-3-3/1995
Immunity:	• Product family standard according to EN 55024:1998
	• Electrostatic Discharge according to EN 61000-4-2:1995 (Contact Discharge: ±4 kV, Air Discharge: ±8 kV)
	• Radio-frequency electromagnetic field according to EN 61000-4-3:1996 (80 - 1000 MHz with 1 kHz AM 80% Modulation: 3 V/m)
	• Electrical fast transient/burst according to EN 61000-4-4:1995 (AC/DC power supply: ±1 kV, Data/Signal lines: ±0.5 kV)
	• Surge immunity test according to EN 61000-4-5:1995 (AC/DC Line to Line: ±1 kV, AC/DC Line to Earth: ±2 kV)
	• Immunity to conducted disturbances, Induced by radio-frequency fields: EN 61000-4-6:1996 (0.15~80 MHz with 1 kHz AM 80% Modulation: 3 V/m)
	• Power frequency magnetic field immunity test according to EN 61000-4-8:1993 (1 A/m at frequency 50 Hz)
	• Voltage dips, short interruptions and voltage variations immunity test according to EN 61000-4-11:1994 (>95% Reduction @10 ms, 30% Reduction @500 ms, >95% Reduction @5000 ms)
LVD:	• EN 60950 (A1/1992; A2/1993; A3/1993; A4/1995; A11/1997)

Safety Compliance

Wichtige Sicherheitshinweise (Germany)

1. Bitte lesen Sie diese Hinweise sorgfältig durch.

2. Heben Sie diese Anleitung für den späteren Gebrauch auf.

3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie keine Flüssigoder Aerosolreiniger. Am besten eignet sich ein angefeuchtetes Tuch zur Reinigung.

4. Die Netzanschlu ßsteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.

5. Das Gerät ist vor Feuchtigkeit zu schützen.

6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Beschädigungen hervorrufen.

7. Die Belüftungsöffnungen dienen der Luftzirkulation, die das Gerät vor Überhitzung schützt. Sorgen Sie dafür, daß diese Öffnungen nicht abgedeckt werden.

8. Beachten Sie beim Anschluß an das Stromnetz die Anschlußwerte.

9. Verlegen Sie die Netzanschlußleitung so, daß niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.

10. Alle Hinweise und Warnungen, die sich am Gerät befinden, sind zu beachten.

11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.

12. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.

13. Öffnen sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von autorisiertem Servicepersonal geöffnet werden.

14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:

    a. Netzkabel oder Netzstecker sind beschädigt.
    b. Flüssigkeit ist in das Gerät eingedrungen.
    c. Das Gerät war Feuchtigkeit ausgesetzt.
    d. Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
    e. Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
    f. Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.

15. Zum Netzanschluß dieses Gerätes ist eine geprüfte Leitung zu verwenden. Für einen Nennstrom bis 6 A und einem Gerätegewicht größer 3 kg ist eine Leitung nicht leichter als H05VV-F, 3G, 0.75 mm² einzusetzen.

Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70 dB(A) oder weniger.

COMPLIANCES

TABLE OF CONTENTS

CHAPTER 1
INTRODUCTION

The SpeedTouch 180 is an IEEE 802.11b/g Wireless LAN Access Point with switchable repeater mode and Ethernet client mode. It provides transparent, wireless high-speed data communications between the wired LAN (and/or within the wireless network) and fixed, portable or mobile devices equipped with an 802.11b/g wireless adapter employing the same radio modulation.

About the SpeedTouch 180

The SpeedTouch 180 offers fast, reliable wireless connectivity with considerable cost savings over wired LANs (which include long-term maintenance overhead for cabling). New technology provides wireless security via Wired Equivalent Privacy (WEP) encryption, Wi-Fi Protected Access (WPA), and MAC address filtering.

Features and Benefits

- Wireless connection using IEEE 802.11b/g technology

- When working in Client Bridge mode, the SpeedTouch 180 allows the wired Ethernet equipped device work wirelessly at 54Mbps

- DHCP for dynamic IP configuration, and DNS for domain name mapping

- Easy setup through a web browser on any operating system that supports TCP/IP

- WDS (Wireless Distribution System) is supported.

Applications

SpeedTouch 180 provides great networking features:

- **Remote access to corporate network information**
  Email, file transfer, and terminal emulation.

- **Difficult-to-wire environments**
  Historical or old buildings, asbestos installations, and open areas where wiring is difficult to employ.

- **Frequently changing environments**
  Retailers, manufacturers, and banks that frequently rearrange the workplace or change location.

- **Temporary LANs for special projects or peak times**
  Trade shows, exhibitions and construction sites which need temporary setup for a short time period. Retailers, airline and shipping companies that need additional workstations for a peak period. Auditors who require workgroups at customer sites.

- **Access to databases for mobile workers**
  Doctors, nurses, retailers, or white-collar workers who need access to databases while being mobile in a hospital, retail store, or an office campus.

- **SOHO users**
  SOHO (Small Office and Home Office) users who need easy and quick installation of a small computer network.

- **Security**
  The SpeedTouch 180 supports security features that deny Internet access to specified PCs, or filter all requests for specific services that might affect your network security. WEP (Wired Equivalent Privacy), WPA (Wi-Fi Protected Access), and MAC filtering provide security over the wireless network.

CHAPTER 2
INSTALLATION

Before installing the SpeedTouch 180, verify that you have all the items listed under the Package Contents list. If any of the items are missing or damaged, contact your local distributor. Also be sure that you have all the necessary cabling before installing the wireless gateway. After installing the SpeedTouch 180, refer to "Configuring the SpeedTouch 180" on page 3-1.

Package Contents

After unpacking the SpeedTouch 180 box, check the contents to be sure you have received the following components:

*   SpeedTouch 180

*   Power adapter

*   Documentation CD

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

System Requirements

Your system must meet the following minimum requirements:

* A PC using a fixed IP address or dynamic IP address assigned via DHCP, as well as a gateway server address and DNS server address from your service provider.

* An A/C power outlet (100~240 V, 50~60 Hz) which will supply power for the device.

* A computer equipped with a 10/100 Mbps Ethernet network interface card, or a USB-to-Ethernet converter or an IEEE 802.11b/g wireless network adapter.

* TCP/IP network protocols installed on each PC that will access the Internet.

* A Java-enabled web browser, such as Microsoft Internet Explorer 5.5 or above installed on one PC at your site for configuring the wireless gateway.

Hardware Description

The SpeedTouch 180 connects to the Internet or to a remote site using its RJ-45 WAN port. It can be connected directly to your PC or to a local area network using the 10/100 Mbps LAN port.

The data transmission speed between wired devices connected to your local area network can run at up to 100 Mbps. Wireless connections can run up to 54 Mbps with 11g wireless network.

Aerial View
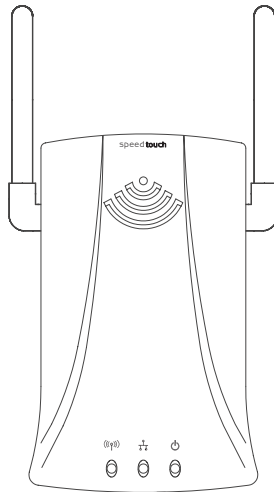
Rear View

Item	Description
Power Inlet	Connect the included power adapter to this inlet. **Warning**: Using the wrong type of power adapter may damage your adapter.
LAN Port	Fast Ethernet port (RJ-45). Connect device (such as a PC, hub or switch) on your local area network to this port. This RJ-45 port can auto-negotiate the operating speed to 10/100 Mbps, the mode to half/full duplex, and the pin signals to MDI/MDI-X (i.e., allowing these ports to be connected to any network device with straight-through cable).

Note: If you use the RELOAD button at the bottom of the device, the SpeedTouch 180 performs a power reset. Unplug the device, and press the RELOAD button. Power the device again while holding the RELOAD button down. Releasing the RELOAD button five seconds after reboot, all the LEDs will illuminate and the factory settings will be restored.

LED Indicators

The LED indicators are illustrated in the following figure and table.
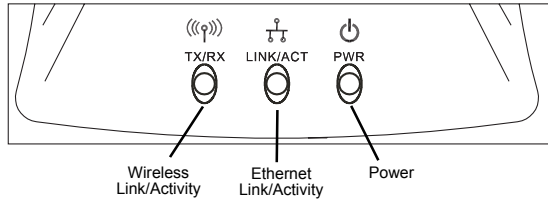
Figure 2-1. LEDs

LED	Status	Description
WLAN	Green	Connection has been established.
	Blinking	The WLAN port is sending or receiving data.
	Off	Wireless feature has been disabled from the user interface. The "Enable Wireless Networking" check box has been de-selected.
LAN	Green	The connection is established at 100 Mbps.
	Yellow	The connection is established at 10 Mbps.
	Blinking	The indicated LAN port is sending or receiving data.
	Off	There is no traffic on the port.
Power	Green	The SpeedTouch 180 is receiving power.
	Blinking	Device is rebooting.
	Off	Power off or failure.

System Requirements

Before you install the Wireless Access Point, be sure you can meet the following requirements:

• A/C power outlet (100~240 V, 50~60 Hz) which will supply power for the access point

• 802.11b or 802.11g compliant wireless Ethernet adapters with TCP/IP compatible protocol installed

• Web browser for configuration

CHAPTER 3
CONFIGURING THE
SPEEDTOUCH 180

This chapter describes how to configure your SpeedTouch 180. For the initial connection to the Internet, you firstly need to configure the SpeedTouch 180. The SpeedTouch 180 can be configured by a web browser, which is Internet Explorer 5.5 or above.

To access the SpeedTouch 180's management interface, enter the default IP address into your web browser: http://10.0.0.140. The default IP address is a static IP address. Enter the default password (admin), and click LOGIN to access the management interface.

Using the Management Interface

The following items on the menu may be configured: System, LAN, Wireless, and Tools. To apply configuration changes, click Apply, and if you want to clear your setting changes, click Cancel. If you wish to view the previous screen, press Back.

Note: To ensure proper screen refresh after a command entry, be sure that Internet Explorer 5.5, or above, is configured as follows: Under the menu Tools/Internet Options/General/Temporary Internet Files/Settings, the setting for "Check for newer versions of stored pages" should be "Every visit to the page."

Status

This is the SpeedTouch 180's management interface menu homepage.

System

The System menu allows the user choose:

Password Settings

Operating Mode

Language Settings

Password Settings

Click System, Password Settings to set the password for administrative access to the SpeedTouch 180.

Please refer to the table below for a description of the password settings.

Parameter	Description
Current password	Enter the original password. (Default: admin)
New password	Enter the new password.
New password (confirmation)	Confirm the new password.
Idle time (in minutes)	The maximum period of time (in minutes) for which the login session is maintained during inactivity. If the connection is inactive for longer than the maximum idle time, it will perform a system logout, and you have to log in again to access the management interface. (Default: 2 minutes) (Range 1-99 minutes)

Note: If your password is lost, or you cannot gain access to the management interface, unplug the power and then press the RELOAD button. Restore the factory defaults by holding down the RELOAD button for at least five seconds while powering up the device. (The default password is admin.)

Operating Mode

The SpeedTouch 180 functions in four different modes:

Access Point - provides simple, wireless access to the Internet

Client Bridge (Infrastructure) - enables a wireless infrastructure connection to a wired ethernet device

Client Bridge (AdHoc) - enables a wireless ad hoc connection to a wired ethernet device

Repeater - extends the range of your network

Click System, Operating Mode, and choose the desired mode.
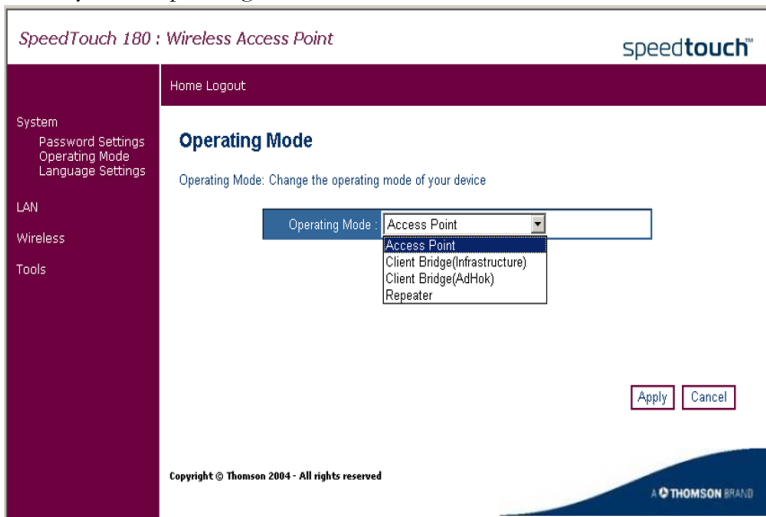
Choose the required mode from the drop-down menu. Highlight the selected mode and click Apply. The device will reboot and ask the user to log in again. After mode selection, the configuration settings will vary depending on which mode you are in.

Please refer to the table below for a description of these differences.

Mode	Description
Access Point Mode	Contains extra security features. These features - WPA, and 802.1x are described in detail the Wireless, Access Point Mode section on page 3-10.
Client Bridge (Infrastructure) Mode	To enable a wireless connection to your ethernet device, for example an Xbox, please refer to the configuration page 3-30.
Client Bridge (AdHoc) Mode	Play head-to-head games using Client Bridge (Ad Hoc) mode. This process is described on page 3-31.
Repeater Mode	In Repeater mode the user must configure the additional Repeater Settings. Refer to page 3-21.

Reset

If at any time the SpeedTouch 180 becomes unresponsive, it may be necessary to perform a reset. To perform a system reset, unplug the power and depress the RELOAD button. Restore the factory defaults by holding down the RELOAD button for at least five seconds while powering up the device. (The default password is admin.)

Language Settings

The SpeedTouch 180 offers a choice of the following languages:
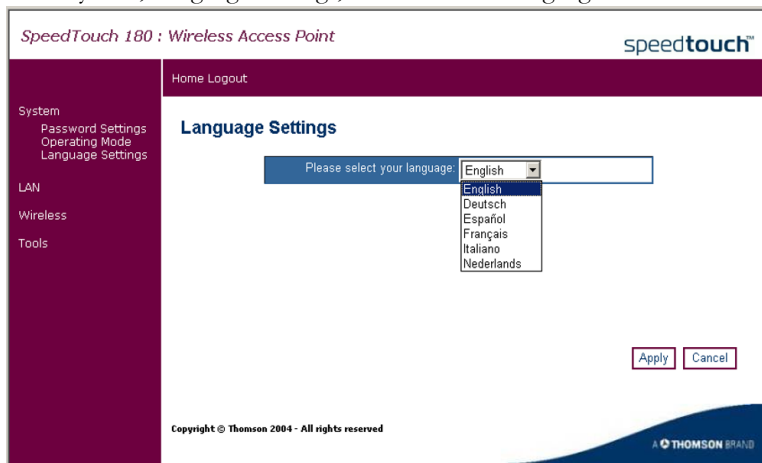
English

German

Spanish

French

Italian

Dutch

Click System, Language Settings, and choose the language desired.

Choose the required language from the drop-down menu. Highlight the selected language and click Apply. The device will change languages instantly, without rebooting.

3-7

LAN

You can configure the LAN settings from here.

LAN Settings

Access Point Mode

Use the LAN Settings page to configure the LAN IP address. In Access Point Mode, you may choose to use a static address or to enable the DHCP server for dynamic client address allocation.

The device will automatically start up with its default static IP address, 10.0.0.140. DNS (Domain Name Servers) map numerical IP addresses to the equivalent domain name (e.g., www.somesite.com). Your ISP should provide the IP address of one or more domain name servers.

See the table below for a list of the LAN features supported.

Parameter	Description
AP name	Name of the access point. (This naming feature is optional.)
IP Settings	Selects a dynamic or fixed IP address.
IP address	The IP address of the SpeedTouch 180.
Subnet mask	The subnet mask of the network.

LAN Settings

Client Bridge Mode

Use the LAN Settings page to configure the LAN IP address. In Client Bridge Mode, you may only use a static address.

The device will automatically start up with its default static IP address, 10.0.0.140. DNS (Domain Name Servers) map numerical IP addresses to the equivalent domain name (e.g., www.somesite.com). Your ISP should provide the IP address of one or more domain name servers.

See the table below for a list of the LAN features supported.

Parameter	Description
AP name	Name of the access point. (This naming feature is optional.)
IP address	The IP address of the SpeedTouch 180.
Subnet mask	The subnet mask of the network.

Wireless

Basic Setting

Access Point Mode

Click on Wireless, Basic Setting to set the channel, Service Set ID (SSID), and transmit speed for your wireless network.
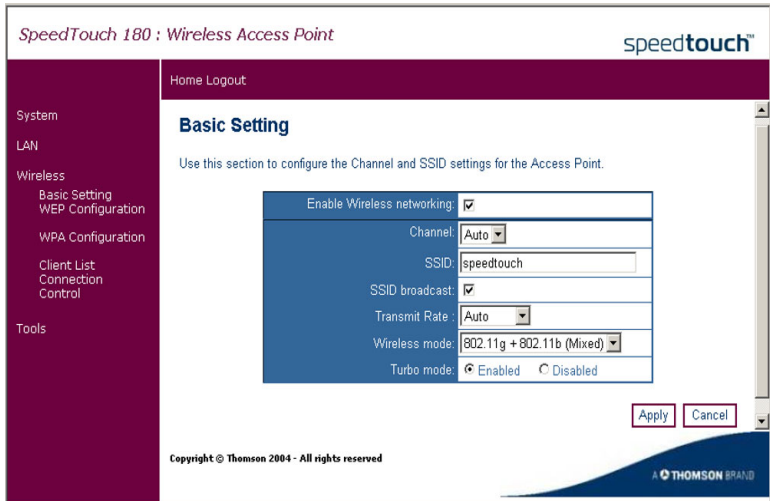
The SSID should be set to the same value as other wireless devices on your network. It is case-sensitive and can consist of up to 32 alphanumeric characters. The access point can be configured for roaming clients by setting the service set identifier (SSID), wireless channel, and other advanced options.

The wireless settings are listed in the table below.

Parameter	Description
Enable Wireless Networking	Enables/disables wireless networking.
Channel	The radio channel used for the SpeedTouch 180 to communicate with the wireless clients. The SpeedTouch 180 will automatically assign itself a radio channel, or you may select one manually.
	The available channel settings are limited by local regulations.
SSID	The Service Set ID. This should be set to the same value as other wireless devices on your network.
	The SSID is case sensitive and can consist of up to 32 alphanumeric characters.
SSID broadcast	Allows the user to show/hide the SSID. (Default: Enabled)
Transmit Rate	The transmit rate is automatically adjusted based on the receiving data error rate. Usually the connection quality will vary depending on the distance between the wireless router and wireless clients. You can also select a lower transmission rate to maximize the radio communication range. (Default: Automatic)
Turbo mode	Enables/disables turbo mode. The turbo mode implemented with the Wireless Access Point can dramatically boost your wireless connectivity with speeds of up to 108 Mbps.(Default: Enabled)
Wireless mode	Select the type of wireless network. The SpeedTouch 180 can support a mixed mode of 11b and 11g, 11g only, and 11g Turbo.

WEP Configuration

Access Point Mode

Click on Wireless, WEP Configuration to configure your WEP parameters.
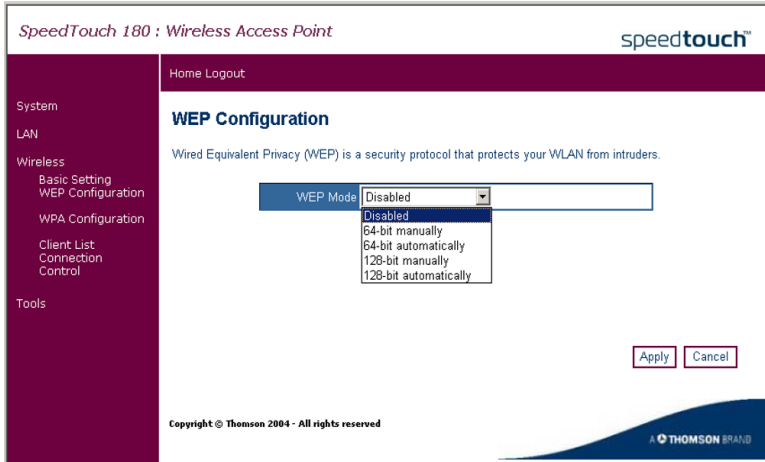
Wired Equivalent Privacy (WEP) is implemented on this device to prevent unauthorized access to your wireless network. For network devices that do not support WPA, it is recommended that you use WEP to protect your network. If WEP is in use, all clients on the network must use the same WEP key settings in order to communicate with each other. The device supports key lengths of the standard 64-bit and industry standard 128-bit. The bit key can be in alphanumeric characters or hexadecimal numerals (0~9, A~F, e.g., D7 0A 9C 7F E5). (Default: Disabled)

• WEP Mode

Select the level of WEP encryption you wish to use, 64-bit 10 hex digits or 128-bit 26 hex digits, manual or automatic. Higher encryption levels offer higher levels of security, but due to the complexity of the encryption, they may decrease network performance.

• 64-bit/128-bit manually

If you are not using a Passphrase, then manually enter a set of values.Using this mode, the user must manually enter keys as 10 hexadecimal digits (0 to 9 and A to F) for 64 bit keys, or 26 hexadecimal digits for 128 bit keys. If you are using 64-bit WEP encryption, then the key must be exactly 10 hexadecimal characters in length. If you are using 128-bit WEP encryption, then the key must be exactly 26 hexadecimal characters in length.

• 64-bit/128-bit automatically

Instead of manually entering WEP keys, you can enter a Passphrase. This Passphrase is used to generate one or more WEP keys.

Note: All devices in your network must use the same Passphrase or WEP key.

WPA Configuration

Access Point Mode only

Click on Wireless, WPA Configuration to configure your WPA settings. WPA is a stronger wireless security solution than WEP. It uses a combination of 802.1x authentication and broadcast/session keys.
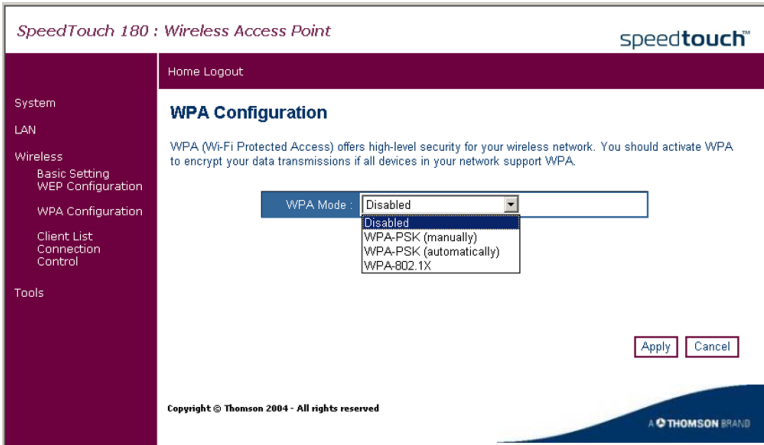
• Pre-Shared Key/Passphrase

If there is no authentication server on your SOHO network, you can issue the Pre-Shared Key to the clients that connect to the Wireless Access Point. Be sure to use the same key for the Wireless Access Point and the connected clients.

• WPA-PSK (manually)

• WPA-PSK (automatically)

WPA Mode :	WPA-PSK (automatically) ▼
Passphrase :	

Notes: 1. Manual Pre-Shared Key supports up to 64-Hex characters.

    2. Type 8~63 Hex characters for the Pre-Shared Passphrase.

    3. Do not use a key that is too long and complex for your clients to type accurately.

    4. A Hex (hexadecimal) digit is a number or letter in the range 0-9 or A-F.

For enterprise deployment, WPA requires a RADIUS authentication server to be configured on the wired network. The 802.1x client and RADIUS server should use an appropriate EAP type - such as EAP-TLS (Transport Layer Security), EAP-TTLS (Tunneled TLS), or PEAP (Protected EAP) - for strongest authentication. Working together, these protocols provide "mutual authentication" between a client, the access point, and a RADIUS server that prevents users from accidentally joining a rogue network. Only when a RADIUS server has authenticated a user's credentials will encryption keys be sent to the access point and client.

Note: To implement WPA on wireless clients requires a WPA-enabled network card driver and 802.1x client software that supports theEAP authentication type that you want to use. Windows XP provides native WPA support, other systems require additional software.

• WPA-802.1X

The Wireless Access Point allows you to use 802.1x authentication for an enterprise network environment with a RADIUS server installed.

RADIUS is a logon authentication protocol that uses software running on a central server to control access to RADIUS-compliant devices on the network. It allows a wireless access point to send the connection parameters to a RADIUS server. There are two parts to the logon process: getting user credentials and authentication. Credentials are composed of a user name, a password, and sometimes a domain. Authentication is the process of verifying that the users really are who they say they are, based on the password.

In 802.1x mode, access will be checked against the authentication database stored on the Wireless Access Point. You must specify the authentication period, and the corresponding parameters in the RADIUS Server Parameters field for the remote authentication protocol.

Parameter	Default	Description
RADIUS Server	0.0.0.0	The IP address of the RADIUS server.
RADIUS Server Port	1812	UDP port is used for RADIUS authentication messages.
RADIUS Key	None	Defines a text string on both the RADIUS client and server to secure RADIUS traffic. The RADIUS server requires MD5 Message-Authenticator attribute for all access request messages. The 802.1x authentication scheme is supported by using the Extensible Authentication Protocol (EAP) over the RADIUS server.

Client List

The Client List screen displays the MAC address and connection speed of the associated clients.
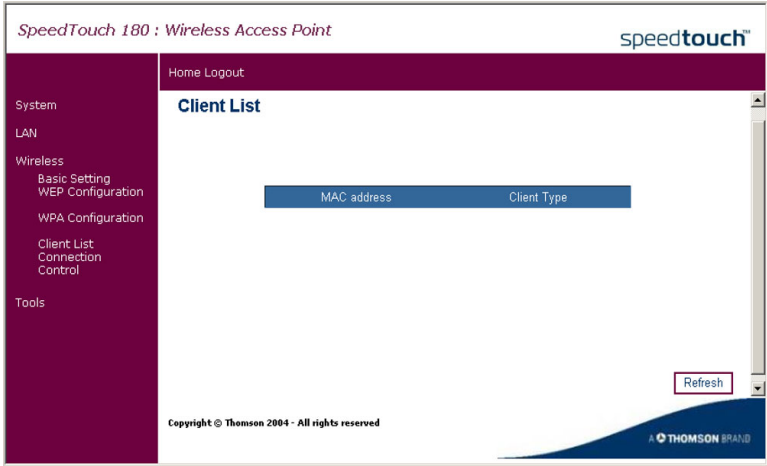
Click the Refresh button to update the list of clients.

Connection Control

This section provides MAC filtering configuration information.
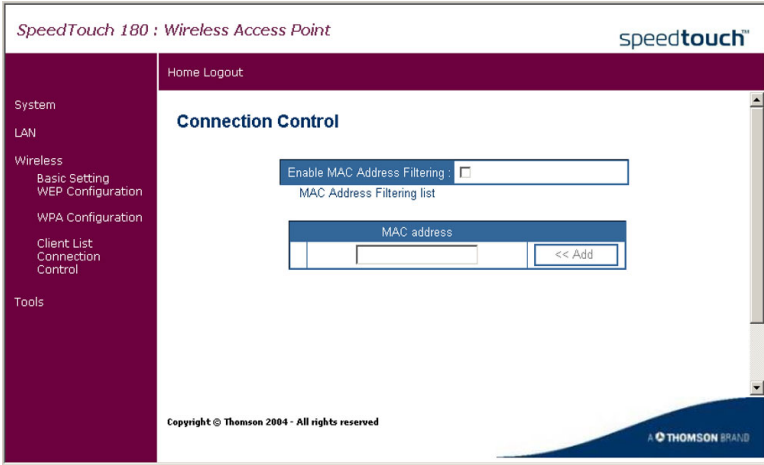
To use MAC address filtering, you must enter a list of allowed client MAC addresses into the filtering table. When enabled only the MAC addresses entered will have access to your network. All other devices will be denied access to your network.

Basic Setting

Client Bridge Mode

Click on Wireless, Basic Setting to set the Service Set ID (SSID) for your wireless network.

The SSID should be set to the same value as the wireless network that you wish to connect to. It is case-sensitive and can consist of up to 32 alphanumeric characters.

In Client Bridge ad hoc mode, the SSID of both devices needs to be consistent.

WEP Configuration

Client Bridge Mode

Click on Wireless, WEP Configuration to set the WEP Mode and Authentication Type.

Wired Equivalent Privacy (WEP) is implemented on this device to prevent unauthorized access to your wireless network. For network devices that do not support WPA, it is recommended that you use WEP to protect your network. If WEP is in use, all clients on the network must use the same WEP key settings in order to communicate with each other. The device supports key lengths of the standard 64-bit and industry standard 128-bit. The bit key can be in alphanumeric characters or hexadecimal numerals (0~9, A~F, e.g., D7 0A 9C 7F E5).

The user must also choose the authentication type. Open System essentially means no security. Using the Shared Key setting, users on both ends of the wireless link have a secret shared key.

Repeater Configuration

Repeater Mode

Using the device as a Repeater, you can extend the range of your network. In Repeater mode, the SpeedTouch 180 uses Wireless Distribution System (WDS) to extend the coverage of your wireless network. The following illustration depicts two WDS-enabled devices communicating via WDS. The user must check the box corresponding to the source device (the 11g WDS-enabled device in the sketch) in the configuration table of the repeater (the SpeedTouch 180 in the sketch), in order for the two devices to communicate.

This page configures the Repeater Settings. Use the Repeater mode to serve client devices that do not require high throughput. Repeaters extend the coverage area of your wireless LAN, but they drastically reduce throughput.

In Repeater mode, the SpeedTouch 180 sends out a signal to check for other devices on the network. Check the box to enable WDS. Click Refresh to display all available devices. The above table allows you to configure the Repeater to repeat the signal of another device. Check the box corresponding to the device that you want to connect to. Enter a name that is easy to remember if required, and click Apply. The SpeedTouch 180 can support up to a maximum of four devices in this mode. The user will receive an error message if this number is exceeded.

Note: Ensure that both the source and repeating devices are using the same channel. The check box becomes available only when the channel of the SpeedTouch 180 and the source is the same. To change the channel, go to the Basic Setting screen in the Wireless section.
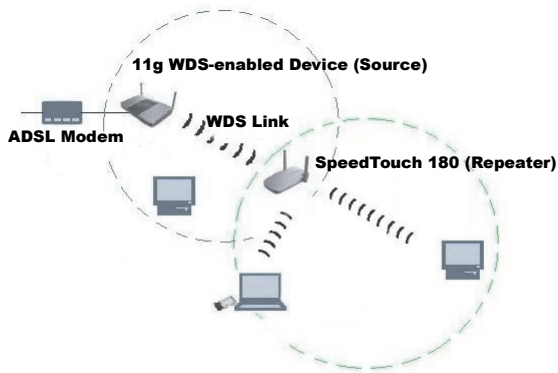
Note: Both the source device and the repeating device must be configured properly to make use of the Repeater mode.

Note: You cannot have a loop in the configuration. A loop will cause a broadcast storm which will result in high activity on the network and then all devices will shut down. Please refer to the following sketch.

SpeedTouch 180

In a situation like this, a broadcast storm will occur

Wireless Network

11g WDS-enabled Device
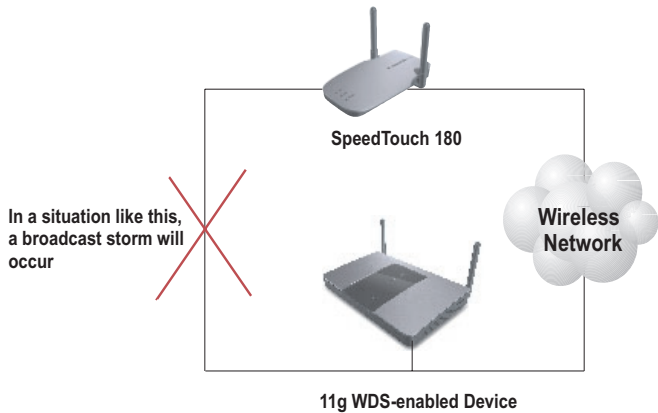
Tools

Use the Tools menu to back up the current configuration, update the firmware, reboot the SpeedTouch 180, import a profile, or view the configuration status of the devide.
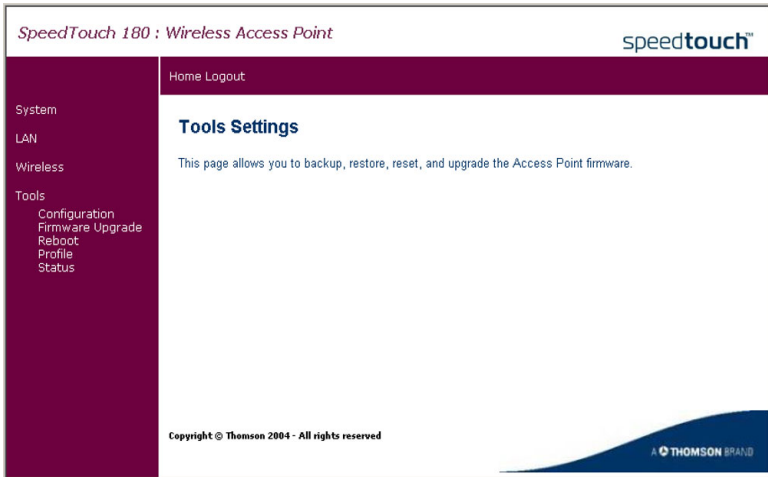
Configuration

Use the Configuration screen to save the current configuration parameters.

- Backup Settings - Saves the SpeedTouch 180's configuration to a file.

- Restore Settings - Restores settings from a previously saved backup configuration file.

- Restore to Factory Defaults - Restores the SpeedTouch 180 settings back to the original factory defaults.

Firmware Upgrade

The Firmware Upgrade page allows the user to upgrade the firmware using the web management tools.
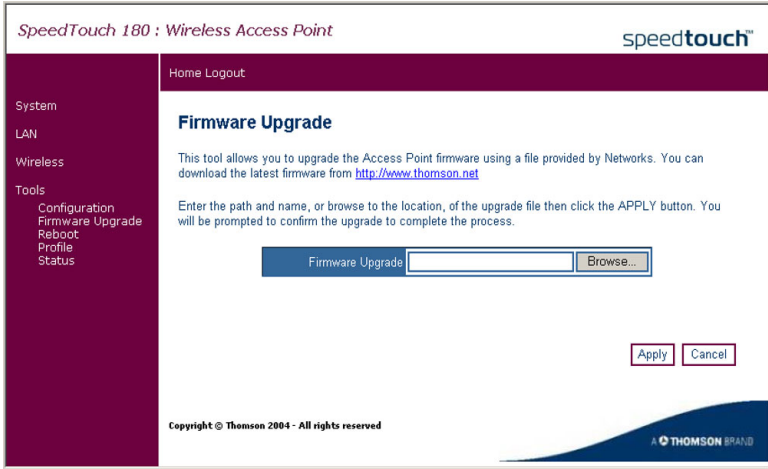
Firstly, save the new code locally on your hard drive. Then, on the Firmware Upgrade page, click Browse... to locate the firmware. After locating the code, click OK to begin the download. The SpeedTouch 180 will automatically reboot after the firmware has been downloaded, and the user will be asked to log in again. The firmware version displays on the Status page, for example, 1.00.00.

Reboot

The Reboot screen allows the user to reset the device.
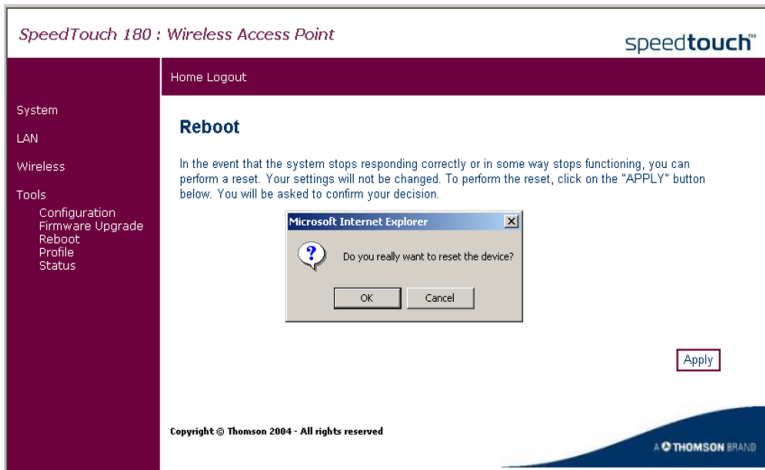
Click Apply and then OK on the two confirmation messages to reboot the SpeedTouch 180. Your settings will not be changed. The reboot will be complete after 30 seconds.

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Profile

On the Profile page, you can import the standard Thomson configuration settings, or profile.
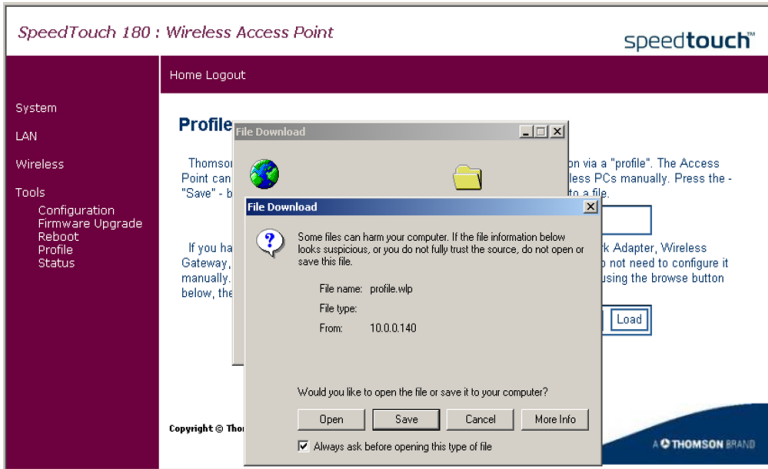
Using this profile, you will not have to configure your wireless PCs manually. Click Save to save the profile to your hard disk, and Load to load the profile.

Status

Click Status on the Tools menu to access the Status page.

The Status screen displays the hardware and firmware version numbers, LAN connection status, and wireless settings of the SpeedTouch 180.

Client Bridge (Infrastructure) Configuration

Click on System, Operating Mode, and select Client Bridge (Infrastructure). Click Apply, and the device will reboot and ask the user to log in again. Unplug the RJ-45 cable and connect the SpeedTouch 180 to your ethernet device for example PC, or gaming console, making your SpeedTouch 180 function as a wireless adapter. The default IP address of the SpeedTouch 180 is 10.0.0.140. Assign your ethernet device an IP address statically within the same subnet, for example, 10.0.0.100, so that you can open the browser and reach the configuration page by typing the default IP address 10.0.0.140.

Note: Only one ethernet device may be connected to the SpeedTouch 180.

Ensure that both the SpeedTouch 180 and the 11g WDS-enabled gateway are using the same SSID.

If you want to use the SpeedTouch 180 as a wireless adapter connected to your PC, you must remember to release the IP, and set TCP/IP settings to "Obtain an IP address automatically" after you finish configuring the SpeedTouch 180. The SpeedTouch 180 will then obtain the IP from the gateway for your ethernet device (for example, your Xbox), using DHCP.

Client Bridge (AdHoc) Configuration

Click on System, Operating Mode, and select Client Bridge (AdHoc) from the drop-down menu. Click Apply, and the device will reboot and ask the user to log in again. The SSID on both devices must be the same in order for the two devices to communicate.

Note: Only one ethernet device may be connected to the SpeedTouch 180.

Home

Click on Home to return to the homepage.

Logout

Click on Logout to exit the web management interface.

APPENDIX A
TROUBLESHOOTING

This section describes common problems you may encounter and possible solutions to them. The SpeedTouch 180 can be easily monitored through panel indicators to identify problems.

Troubleshooting Chart	
Problem	**Action**
LED Indicators	
Power LED is Off	• Check connections between the SpeedTouch 180, the external power supply, and the wall outlet. • If the power indicator does not light when the power cord is plugged in, you may have a problem with the power outlet, power cord, or external power supply. However, if the unit powers off after running for a while, check for loose power connections, power losses, or surges at the power outlet. If you still cannot isolate the problem, then the external power supply may be defective. In this case, contact Technical Support for assistance.

Troubleshooting Chart	
Problem	**Action**
LED Indicators	
LAN LED is Off	• Verify that the SpeedTouch 180 and attached device are powered on. • Be sure the cable is plugged into both the SpeedTouch 180 and the corresponding device. • Verify that the proper cable type is used and that its length does not exceed the specified limits. • Be sure that the network interface on the attached device is configured for the proper communication speed and duplex mode. • Check the adapter on the attached device and cable connections for possible defects. Replace any defective adapter or cable if necessary.
Network Connection Problems	
Cannot ping the SpeedTouch 180 from the attached LAN	• Verify that the IP addresses are properly configured. For most applications, you should use the SpeedTouch 180's DHCP function to dynamically assign IP addresses to hosts on the attached LAN. However, if you manually configure IP addresses on the LAN, verify that the same network address (network component of the IP address) and subnet mask are used for both the SpeedTouch 180 and any attached LAN devices. • Be sure the device you want to ping (or from which you are pinging) has been configured for TCP/IP.

Troubleshooting Chart	
Problem	**Action**
Management Problems	
Cannot connect using the web browser	• Be sure that you have configured the SpeedTouch 180 with a valid IP address, subnet mask, and default gateway. • Check that you have a valid network connection to the SpeedTouch 180 and that the port you are using has not been disabled. • Check the network cabling between the management station and the SpeedTouch 180.
Forgot or lost the password	• If your password is lost, or you cannot gain access to the management interface, unplug the power and then press the reset button. Restore the factory defaults by holding down the reset button for at least five seconds while powering up the device. (The default password is admin.)

Troubleshooting Chart	
Problem	**Action**
Wireless Problems	
A wireless PC cannot associate with the device.	• Make sure the wireless clients use the same SSID settings as the SpeedTouch 180. • You need to have the same security settings on the clients and the SpeedTouch 180.
The wireless network is often interrupted.	• Move your wireless clients closer to the SpeedTouch 180 to find a better signal. If the signal is still weak, change the angle of the antenna. • There may be interference, possibly caused by microwave ovens or cordless phones. Change the location of the interference sources or of the SpeedTouch 180. • Change the wireless channel on the 11g WDS-enabled device. • Check that the antenna, connectors, and cabling are firmly connected.
The SpeedTouch 180 cannot be detected by a wireless client.	• The distance between the SpeedTouch 180 and wireless clients is too far. • Make sure the wireless clients use the same SSID, channel, and security settings as the SpeedTouch 180.
In Repeater mode, a loop has been detected.	• A broadcast storm has resulted from incorrect set up. Please refer to page 3-23.

APPENDIX B
CABLES

Ethernet Cable

Caution: Do not plug a phone jack connector into any RJ-45 port. Use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.

Specifications

Cable Types and Specifications			
Cable	Type	Max. Length	Connector
10BASE-T	Cat. 3, 4, 5 100-ohm UTP	100 m (328 ft)	RJ-45
100BASE-TX	Cat. 5 100-ohm UTP	100 m (328 ft)	RJ-45

Wiring Conventions

For Ethernet connections, a twisted-pair cable must have two pairs of wires. Each wire pair is identified by two different colors. For example, one wire might be red and the other, red with white stripes. Also, an RJ-45 connector must be attached to both ends of the cable.

Each wire pair must be attached to the RJ-45 connectors in a specific orientation. The following figure illustrates how the pins on an Ethernet RJ-45 connector are numbered. Be sure to hold the connectors in the same orientation when attaching the wires to the pins.
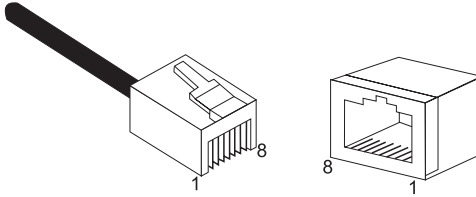
Figure B-1. RJ-45 Ethernet Connector Pin Numbers

RJ-45 Port Connection

Use the straight-through CAT-5 Ethernet cable provided in the package to connect the Barricade to your PC. When connecting to other network devices such as an Ethernet switch, use the cable type shown in the following table.

Attached Device Port Type	Connecting Cable Type
MDI-X	Straight-through
MDI	Crossover

Pin Assignments

With 100BASE-TX/10BASE-T cable, pins 1 and 2 are used for transmitting data, and pins 3 and 6 for receiving data.

RJ-45 Pin Assignments	
Pin Number	Assignment[1]
1	Tx+
2	Tx-
3	Rx+
6	Rx-

1: The "+" and "-" signs represent the polarity of the wires that make up each wire pair.

Straight-Through Wiring

If the port on the attached device has internal crossover wiring (MDI-X), then use straight-through cable.

Straight-Through Cable Pin Assignments	
End 1	End 2
1 (Tx+)	1 (Tx+)
2 (Tx-)	2 (Tx-)
3 (Rx+)	3 (Rx+)
6 (Rx-)	6 (Rx-)

Crossover Wiring

If the port on the attached device has straight-through wiring (MDI), use crossover cable.

Crossover Cable Pin Assignments	
End 1	End 2
1 (Tx+)	3 (Rx+)
2 (Tx-)	6 (Rx-)
3 (Rx+)	1 (Tx+)
6 (Rx-)	2 (Tx-)

APPENDIX C
SPECIFICATIONS

General Specifications

Maximum Channels

IEEE 802.11 compliant

11 channels (US, Canada)

13 channels (ETSI)

14 channels (Japan)

LAN Interface

1 RJ-45 10 BASE-T/100 BASE-TX port

Auto-negotiates the connection speed to 10 Mbps Ethernet or 100 Mbps Fast Ethernet, and the transmission mode to half duplex or full duplex.

Indicator Panel

PWR (Power), LAN (Ethernet Link/Activity), WLAN (Wireless Link/Activity)

Network Management

HTML Web-browser interface, Windows 98/Me/NT/2000/XP utility

Operating Systems

Windows 98/Me/NT/2000/XP

Dimensions

136 x 89 x 16 (mm)

Weight

150 g

Current Consumption

5V, 1 A maximum

AC Input
220V ~ 240 AC

DC Output
5V DC

Output Current
2.4 A maximum

Management
Web management

Advanced Features
Dynamic IP Address Configuration – DHCP

Internet Standards
RFC 826 ARP, RFC 791 IP, RFC 792 ICMP, RFC 768 UDP, RFC 793 TCP,
RFC 1483 AAL5 Encapsulation, RFC 1661 PPP, RFC 1866 HTML,
RFC 2068 HTTP, RFC 2364 PPP over ATM

Temperature
Operating 0 to 55 °C (32 to 131 °F)
Storage -20 to 70 °C (-4 to 158 °F)

Humidity
5% to 90% (non-condensing)

GLOSSARY

10BASE-T

IEEE 802.3 specification for 10 Mbps Ethernet over two pairs of Category 3, 4, or 5 UTP cable.

100BASE-TX

IEEE 802.3u specification for 100 Mbps Fast Ethernet over two pairs of Category 5 UTP cable.

Access Point (AP)

An interface between the wireless network and a wired network. Access points combined with a distribution system (e.g. Ethernet) support the creation of multiple radio cells (BSSs) that enable roaming throughout a facility.

Ad Hoc

An ad hoc wireless LAN is a group of computers, each with LAN adapters, connected as an independent wireless LAN.

Authentication

The process a station uses to announce its identify to another station. IEEE 802.11 specifies two forms of authentication: open system and shared key.

Backbone

The core infrastructure of a network. The portion of the network that transports information from one central location to another central location where it is unloaded onto a local system.

Bandwidth

The difference between the highest and lowest frequencies available for network signals. Also synonymous with wire speed, the actual speed of the data transmission along the cable.

Base Station

In mobile telecommunications, a base station is the central radio transmitter/receiver that maintains communications with the mobile radiotelephone sets within its range. In cellular and personal communications applications, each cell or micro-cell has its own base station; each base station in turn is interconnected with other cells' bases.

Basic Service Set (BSS)

A set of 802.11-compliant stations that operate as a fully-connected wireless network.

Domain Naming System (DNS)

System used in the Internet for translating names of network nodes into addresses.

Dynamic Host Configuration Protocol (DHCP)

Issues IP addresses automatically within a specified range to devices such as PCs when they are first powered on. The device retains the use of the IP address for a specific license period that the system administrator can define. DHCP is available as part of the many operating systems including Microsoft Windows NT Server and UNIX.

Ethernet

A network communication system developed and standardized by DEC, Intel, and Xerox, using baseband transmission, CSMA/CD access, logical bus topology, and coaxial cable. The successor IEEE 802.3 standard provides for integration into the OSI model and extends the physical layer and media with repeaters and implementations that operate on fiber, thin coax and twisted-pair cable.

File Transfer Protocol (FTP)

A TCP/IP protocol for file transfer.

Infrastructure

An integrated wireless and wired LAN is called an infrastructure configuration.

Local Area Network (LAN)

A group of interconnected computer and support devices.

LED

Light emitting diode used for monitoring a device or network condition.

Media Access Control (MAC)

A portion of the networking protocol that governs access to the transmission medium, facilitating the exchange of data between network nodes.

Node

Any network-addressable device on the network, such as a router or network interface card.

RJ-45 Connector

A connector for twisted-pair wiring.

Roaming

A wireless LAN mobile user moves around an ESS and maintains a continuous connection to the infrastructure network.

RTS Threshold

Transmitters contending for the medium may not be aware of each other. RTS/CTS mechanism can solve this "Hidden Node Problem." If the packet size is smaller than the preset RTS Threshold size, the RTS/CTS mechanism will NOT be enabled.

Service Set Identifier (SSID)

> An identifier attached to packets sent over the wireless LAN that functions as a "password" for joining a particular radio network (BSS). All radios and access points within the same BSS must use the same SSID, or their packets will be ignored.

Wired Equivalent Privacy (WEP)

> An optional IEEE 802.11 function that offers frame transmission privacy similar to a wired network. The Wired Equivalent Privacy generates secret shared encryption keys that both source and destination stations can use to alter frame bits to avoid disclosure to eavesdroppers.

Wi-Fi Protected Access (WPA)

> An optional IEEE 802.11 function that offers a high level of security. Wi-Fi Protected Access uses a combination of 802.1x authentication and broadcast/session keys.