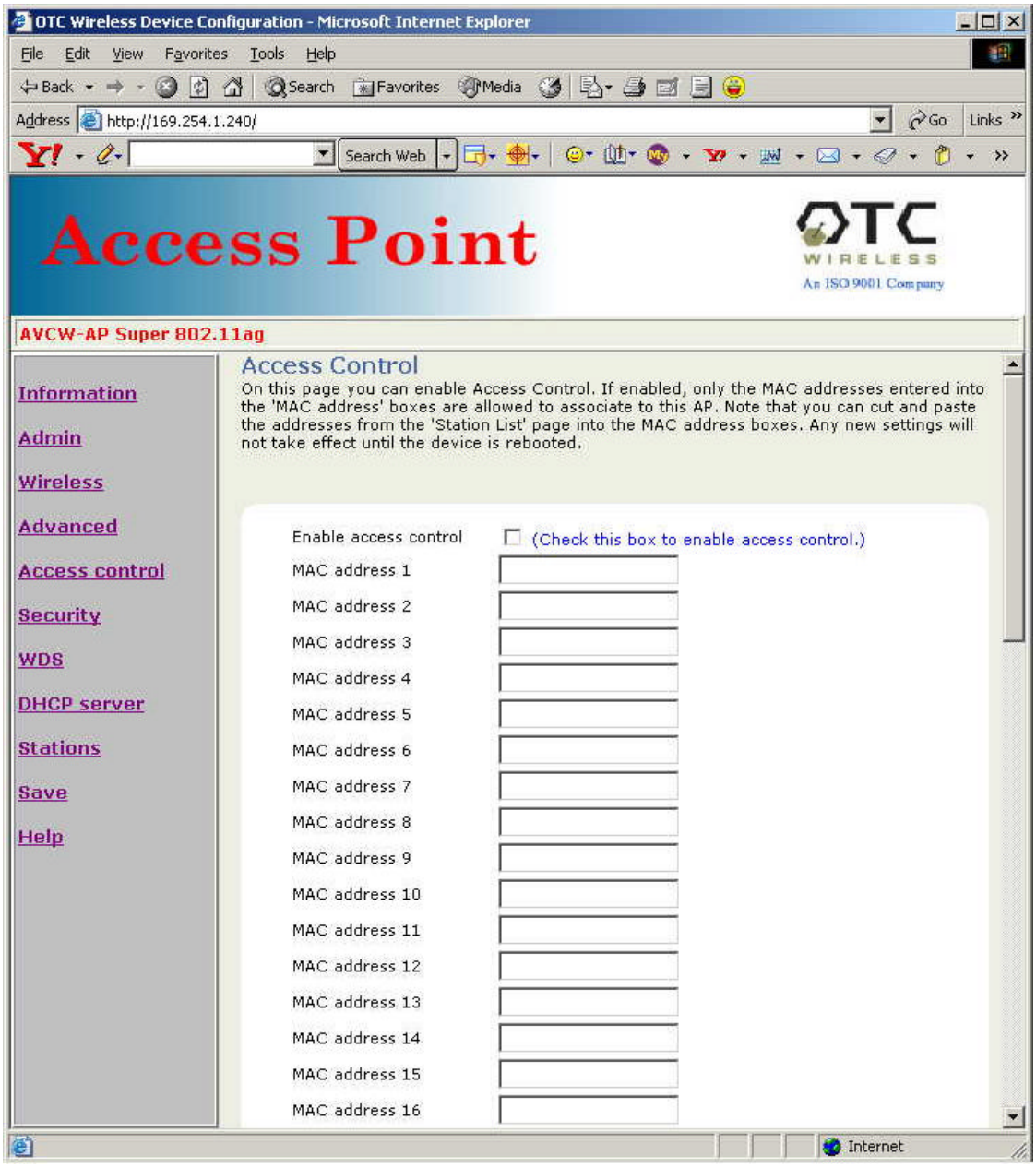
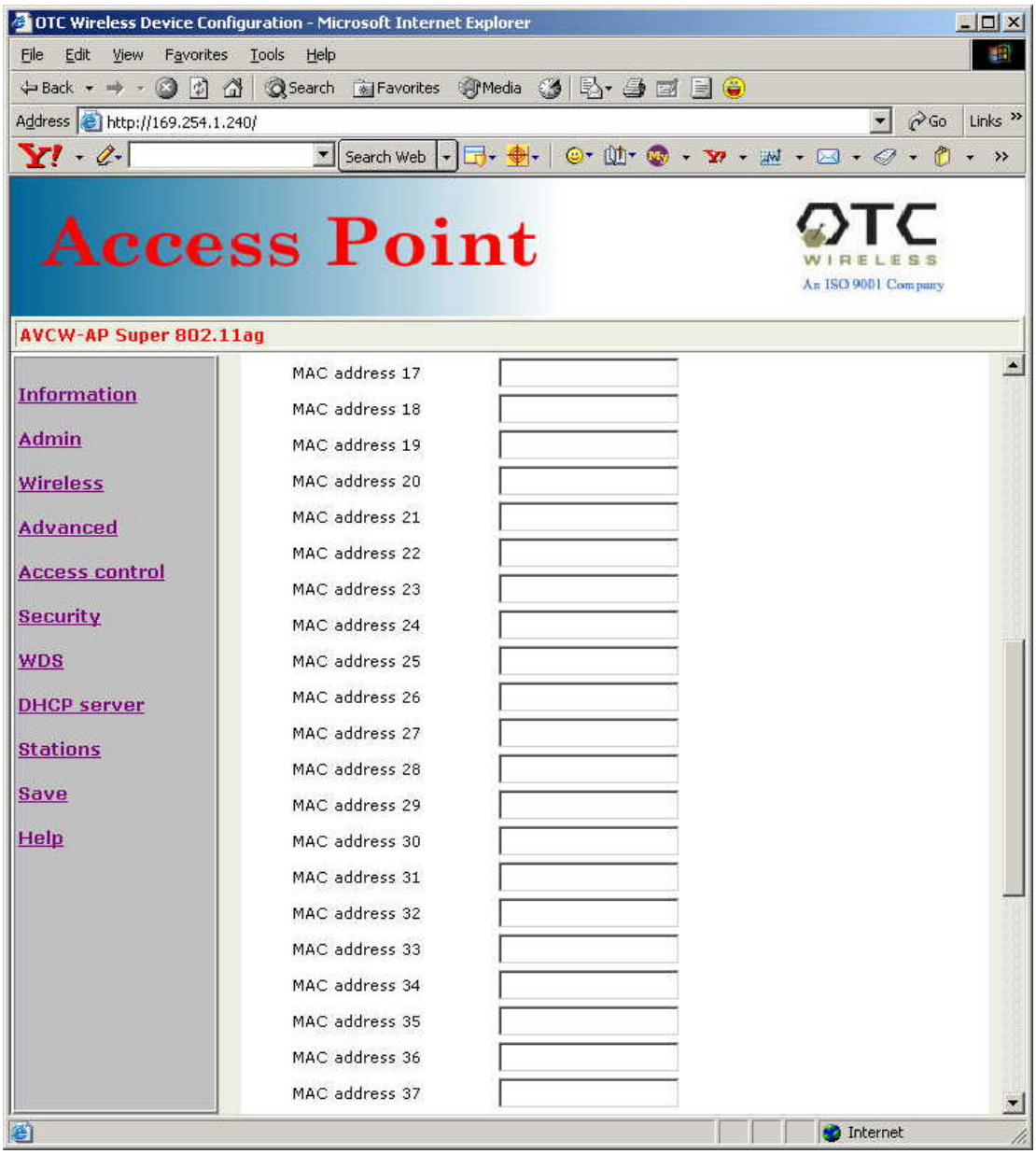
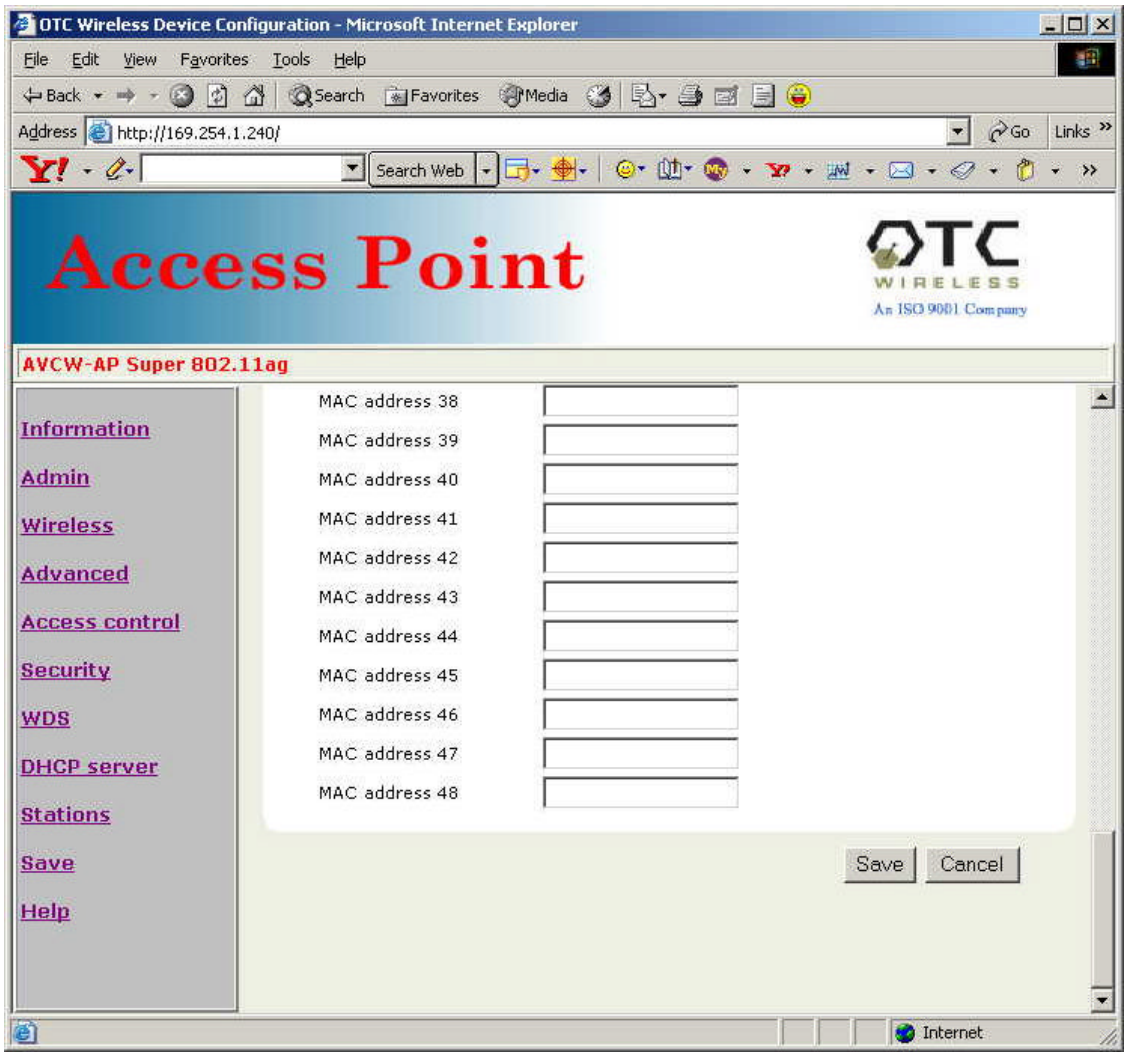
4.6 Access Control




OTC Wireless Device Configuration - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://169.254.1.240/
Go Links
Search Web
Access Point
OTC WIRELESS
An ISO 9001 Company
AVCW-AP Super 802.11ag
Information
Admin
Wireless
Advanced
Access control
Security
WDS
DHCP server
Stations
Save
Help
MAC address 17
MAC address 18
MAC address 19
MAC address 20
MAC address 21
MAC address 22
MAC address 23
MAC address 24
MAC address 25
MAC address 26
MAC address 27
MAC address 28
MAC address 29
MAC address 30
MAC address 31
MAC address 32
MAC address 33
MAC address 34
MAC address 35
MAC address 36
MAC address 37
Internet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OTC WIRELESS
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Information
Admin
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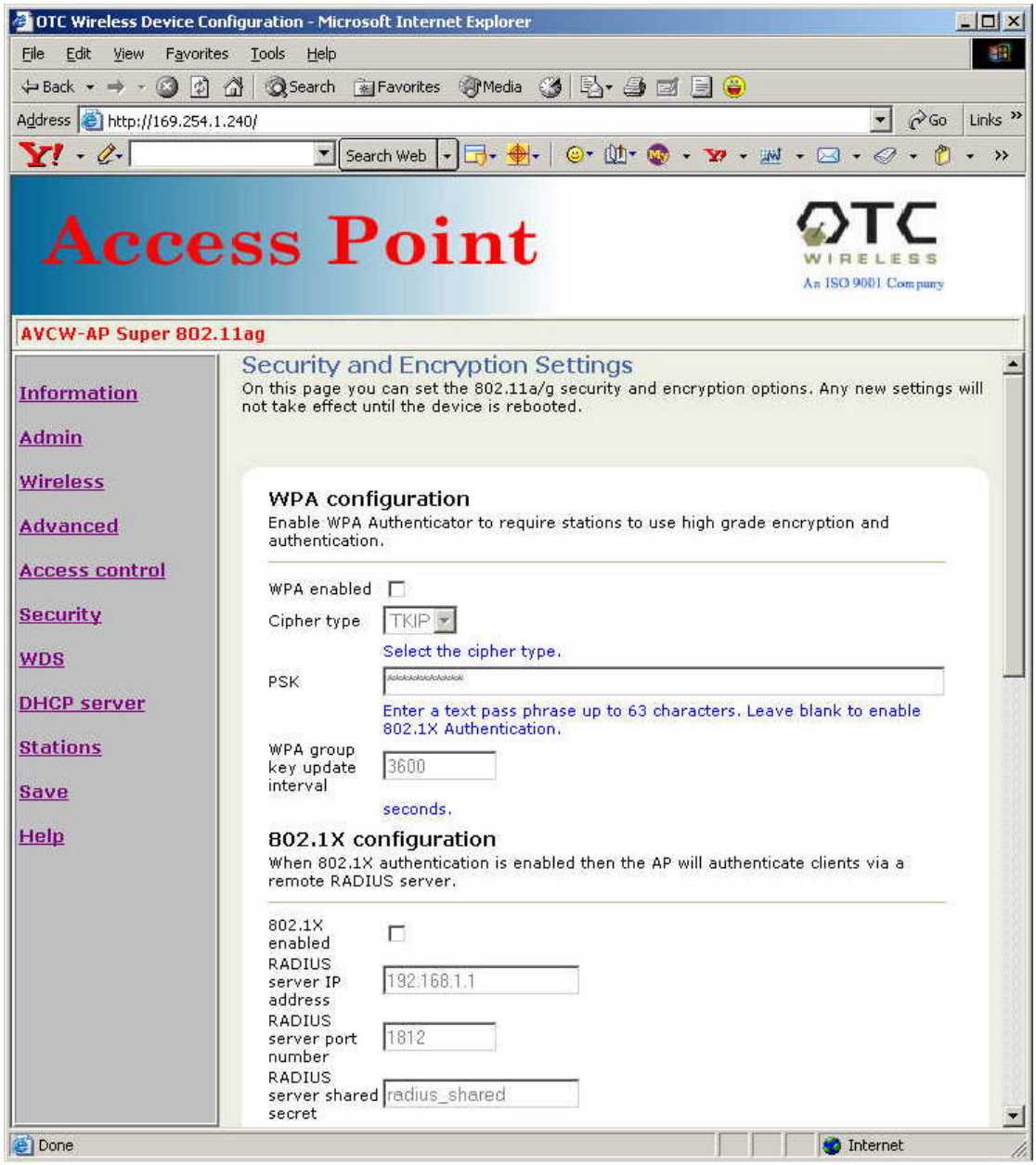
Advanced
Access control
Security
WDS
DHCP server
Stations
Save
Help
MAC address 38
MAC address 39
MAC address 40
MAC address 41
MAC address 42
MAC address 43
MAC address 44
MAC address 45
MAC address 46
MAC address 47
MAC address 48
Save
Cancel
Internet

4.7 Security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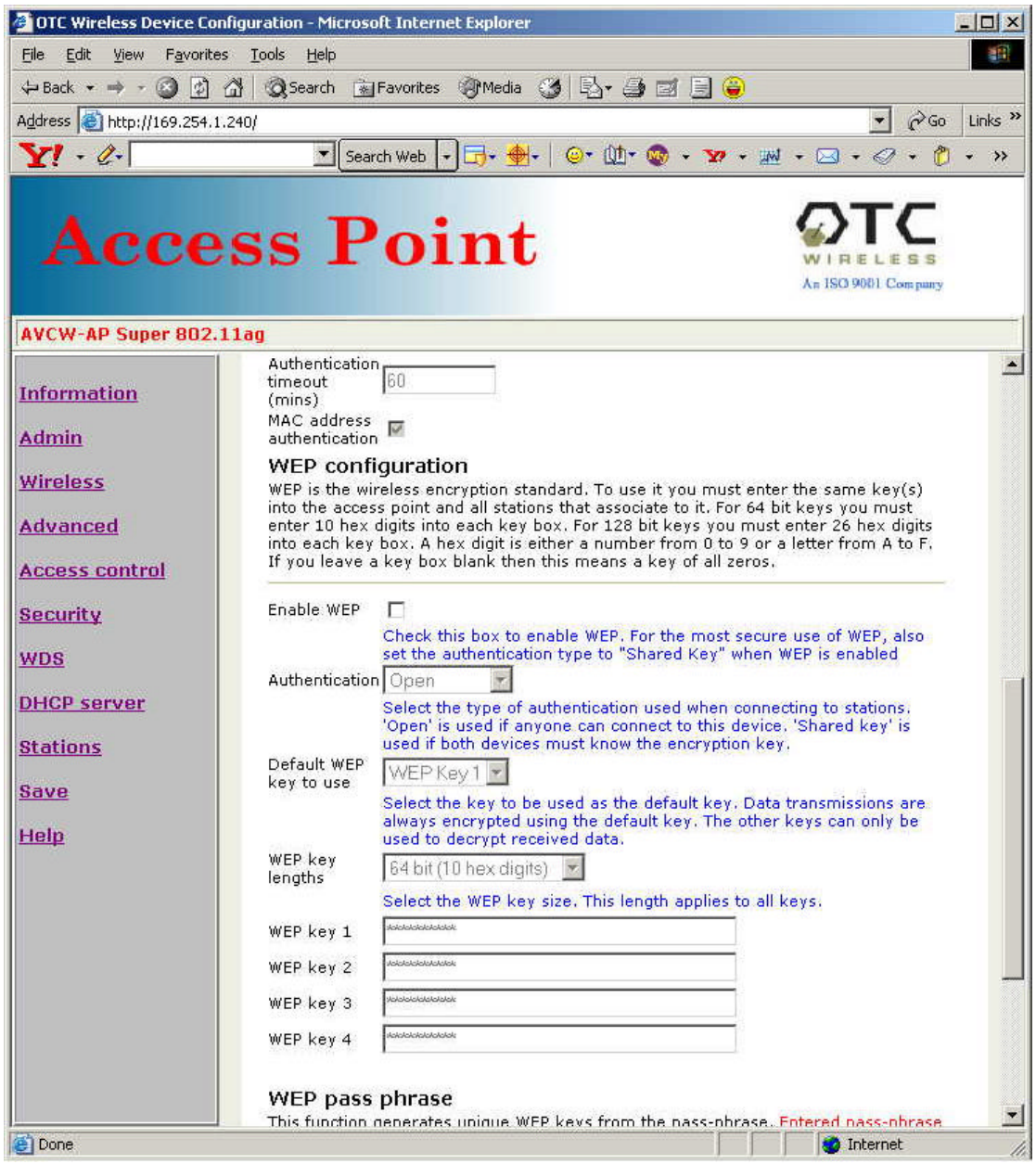
Admin
Wireless
Advanced
Access control
Security
WDS
DHCP server
Stations
Save
Help
Security and Encryption Settings
On this page you can set the 802.11a/g security and encryption options. Any new settings will not take effect until the device is rebooted.
WPA configuration
Enable WPA Authenticator to require stations to use high grade encryption and authentication.
WPA enabled
Cipher type
TKIP
Select the cipher type.
PSK
Enter a text pass phrase up to 63 characters. Leave blank to enable 802.1X Authentication.
WPA group key update interval
3600
seconds.
802.1X configuration
When 802.1X authentication is enabled then the AP will authenticate clients via a remote RADIUS server.
802.1X enabled
RADIUS server IP address
192.168.1.1
RADIUS server port number
1812
RADIUS server shared secret
radius_shared
Done
Internet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OTC WIRELESS
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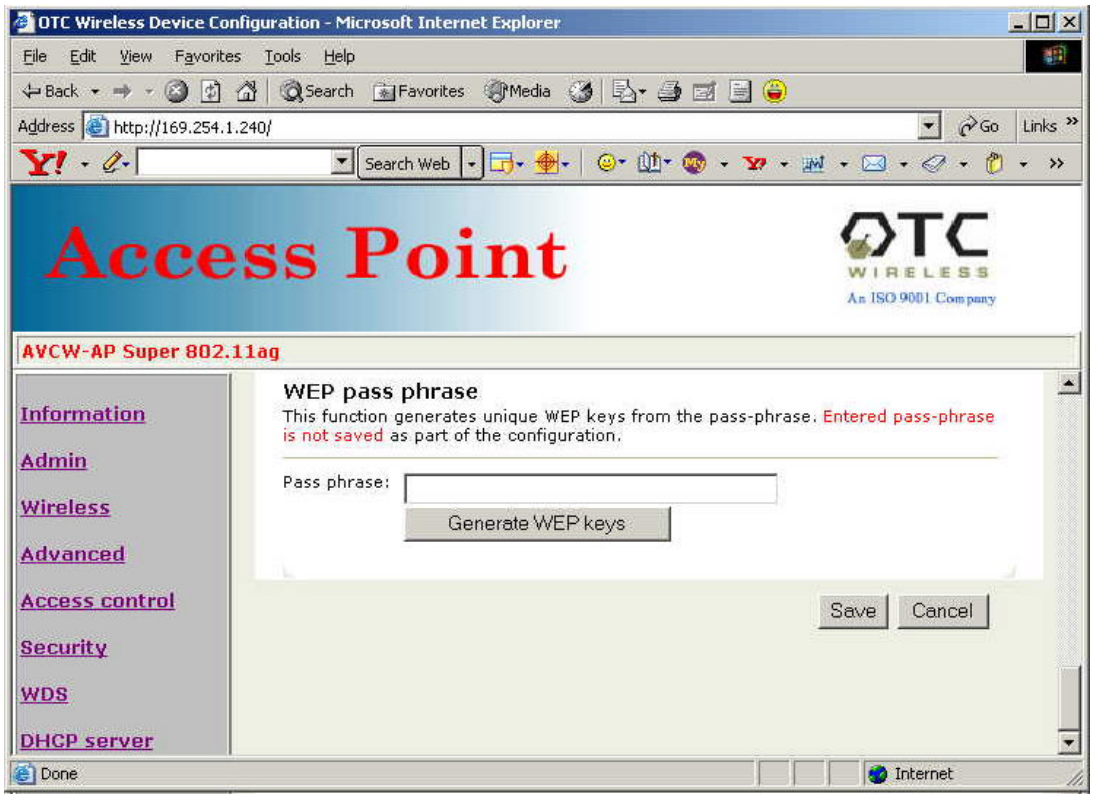
Information
Admin
Wireless
Advanced
Access control
Security
WDS
DHCP server
Stations
Save
Help
Authentication timeout (mins)
60
MAC address authentication
WEP configuration
WEP is the wireless encryption standard. To use it you must enter the same key(s) into the access point and all stations that associate to it. For 64 bit keys you must enter 10 hex digits into each key box. For 128 bit keys you must enter 26 hex digits into each key box. A hex digit is either a number from 0 to 9 or a letter from A to F. If you leave a key box blank then this means a key of all zeros.
Enable WEP
Check this box to enable WEP. For the most secure use of WEP, also set the authentication type to "Shared Key" when WEP is enabled
Authentication
Open
Select the type of authentication used when connecting to stations. 'Open' is used if anyone can connect to this device. 'Shared key' is used if both devices must know the encryption key.
Default WEP key to use
WEP Key 1
Select the key to be used as the default key. Data transmissions are always encrypted using the default key. The other keys can only be used to decrypt received data.
WEP key lengths
64 bit (10 hex digits)
Select the WEP key size. This length applies to all keys.
WEP key 1
WEP key 2
WEP key 3
WEP key 4
WEP pass phrase
This function generates unique WEP keys from the pass-phrase. Entered pass-phrase
Done
Internet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Search Web
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OTC WIRELESS
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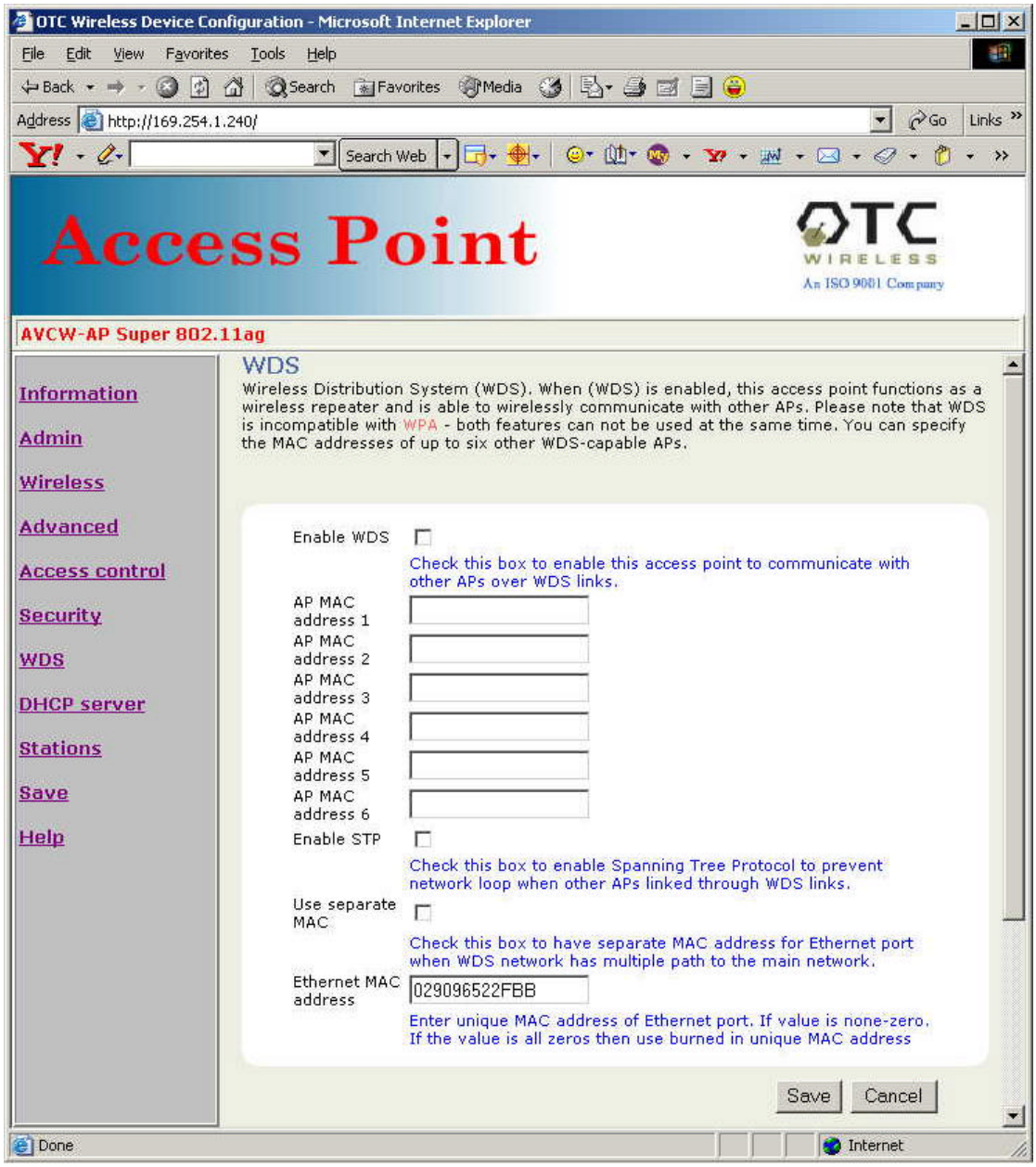
Information
Admin
Wireless
Advanced
Access control
Security
WDS
DHCP server
WEP pass phrase
This function generates unique WEP keys from the pass-phrase. Entered pass-phrase is not saved as part of the configuration.
Pass phrase:
Generate WEP keys
Save
Cancel
Done
Internet

4.8 WDS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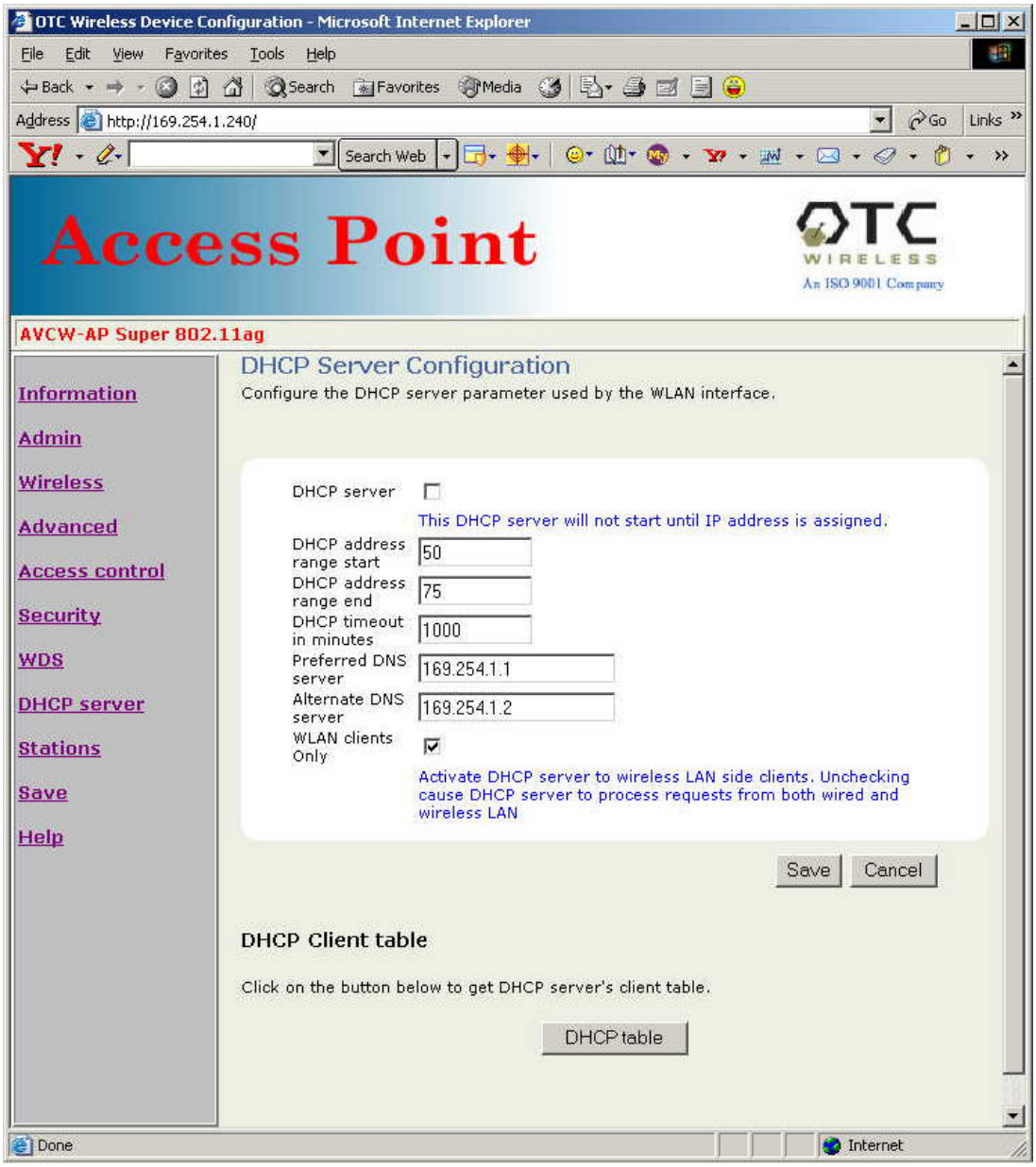
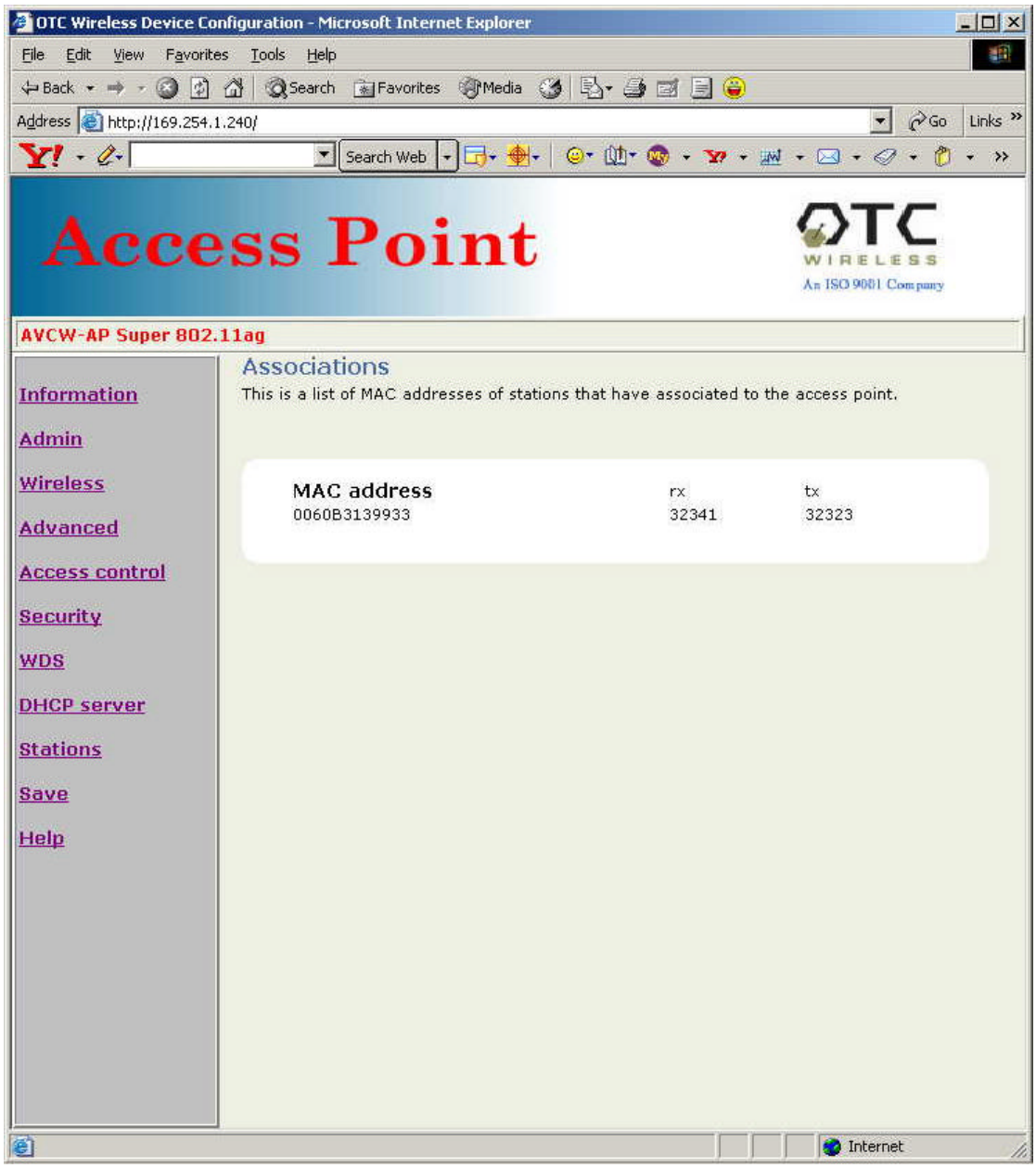
Admin
Wireless
Advanced
Access control
Security
WDS
DHCP server
Stations
Save
Help
WDS
Wireless Distribution System (WDS). When (WDS) is enabled, this access point functions as a wireless repeater and is able to wirelessly communicate with other APs. Please note that WDS is incompatible with WPA - both features can not be used at the same time. You can specify the MAC addresses of up to six other WDS-capable APs.
Enable WDS
Check this box to enable this access point to communicate with other APs over WDS links.
AP MAC address 1
AP MAC address 2
AP MAC address 3
AP MAC address 4
AP MAC address 5
AP MAC address 6
Enable STP
Check this box to enable Spanning Tree Protocol to prevent network loop when other APs linked through WDS links.
Use separate MAC
Check this box to have separate MAC address for Ethernet port when WDS network has multiple path to the main network.
Ethernet MAC address
029096522FBB
Enter unique MAC address of Ethernet port. If value is none-zero. If the value is all zeros then use burned in unique MAC address
Save
Cancel
Done
Internet

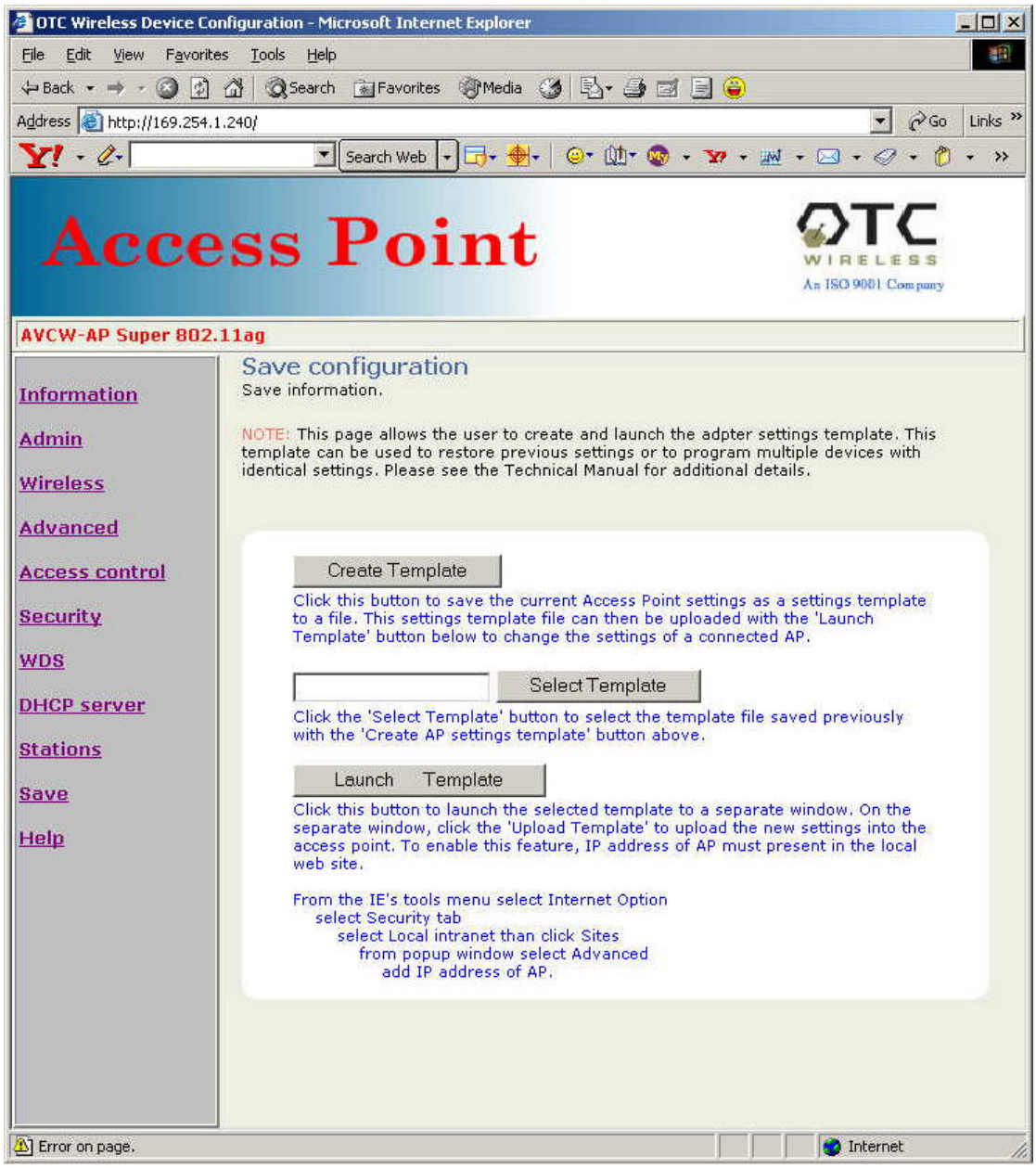
4.9 DHCP Server



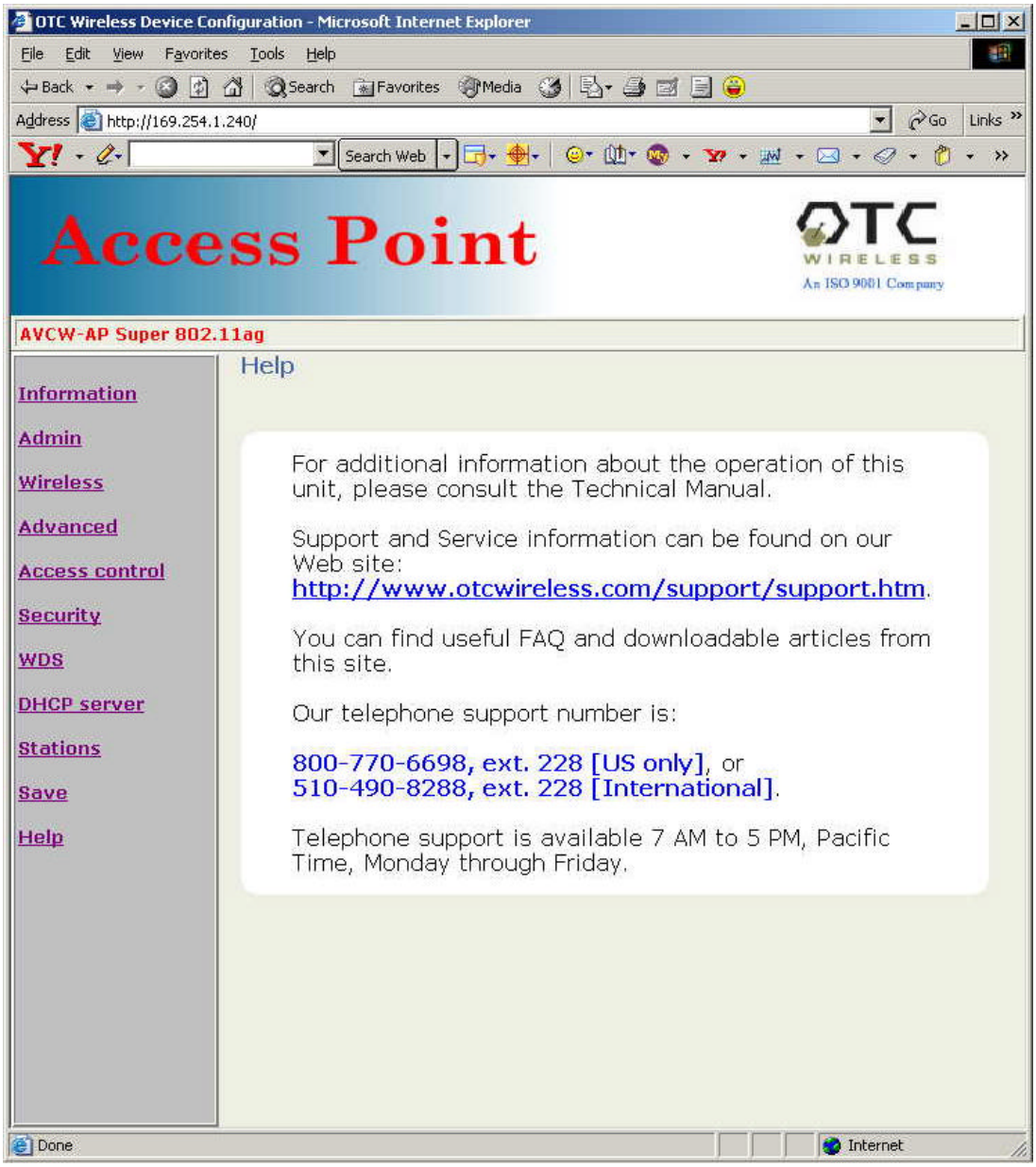
4.10 Stations



4.11 Save Configuration - Template



4.12 Help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AVCW-AP Super 802.11ag
Information
Admin
Wireless
Advanced
Access control
Security
WDS
DHCP server
Stations
Save
Help
Help
For additional information about the operation of this unit, please consult the Technical Manual.
Support and Service information can be found on our Web site:
http://www.otcwireless.com/support/support.htm.
You can find useful FAQ and downloadable articles from this site.
Our telephone support number is:
800-770-6698, ext. 228 [US only], or
510-490-8288, ext. 228 [International].
Telephone support is available 7 AM to 5 PM, Pacific Time, Monday through Friday.
Done
Internet

Chapter 5: Troubleshooting

5.1 No Page Displayed When Accessing the Web-based Utility

This is either because the radio is extremely busy on the RF side or because the Ethernet connection is problematic. Try hitting the “Refresh” or “Reload” button of the Web browser a few times. If the same message persists, it is unlikely that the problem is caused by a busy radio. Check your Ethernet connection. Make sure you use at least a legitimate CAT-5 cable. Make sure that it is a straight-through cable between the radio and the computer, or a crossover cable between the radio and the hub, if a hub is involved. Check to make sure that the Ethernet card of the computer running the Web-based Utility program is functional and has a correct IP address and subnet mask setting.

5.2 No Radio Link

Check the following possible causes:

- Make sure that the target radio, the Station, is turned on and operating properly.
- Make sure that the “Signal Strength” indicator on the target Station radio’s utility program is not zero. A minimum of 70% is recommended. If the “Signal Strength” is less than 70%, the distance between the Trimar-AP and the targeted Station radio may be too far. Decrease the distance to see if the radio link can be established.
- Make sure that the target Station radio’s SSID is blank or the same as that for the Trimar-AP Access Point.
- If the WPA is turned on, make sure that the entire chain of necessary configuration from the host supplicant to the RADIUS is properly configured. If you only turned on WEP and/or 802.1X, again make sure that all the necessary configuration is correct.
- For troubleshooting purposes, turn off all the security settings and see if the station radio and the AP can be linked.
- Make sure that the target Station radio’s MAC address is added to the “Allowed Station List” if this feature on Trimar-AP is turned on.
- Make sure that there is no RF interference present in the radio network.

5.3 No Network Connection While the Radio Link is Good

If the target Station radio's utility indicates good "link quality" with Trimar-AP, but the host computer/device cannot be connected to the network

- Make sure that the Yellow LED on the radio is NOT constantly ON. If it is, Ethernet connection is questionable.

- Make sure the Ethernet Adapter of the host computer/device is properly installed.

- Make sure that the UTP cable connecting the Trimar-AP radio and the network equipment (switch or router) meets at least the CAT-5 standard and has the correct straight-through or cross-over connection. Perform similar checks of the Ethernet cable connection of the target Station radio to its host device.

- Make sure that the IP address of the host computer/device connected to the target Station radio is properly set up for the network.

5.4 Poor Link Quality

If the "Signal Strength" is reasonably high (>70%) and the "Link Quality" is not zero, but the "Link Quality" stays in the Poor range, it could be due to one of the following reasons:

- Make sure that ***radio interference*** is not present in the radio network.

- Make sure that the radio is not surrounded by many strongly reflecting (metallic) surfaces. With multiple reflecting surfaces between the radio in question and the target radio, a severe "***multi-path***" problem may introduce high bit error rate despite a strong "Signal Strength".

- Make sure that there is not a condition of severe ***packet collision*** caused by a "hidden node" problem. A "hidden node" problem is the situation where the RF signal from two or more Station radios cannot reach each other (but can reach the AP). In such situation, multiple Stations may attempt to transmit data packet to the AP at the same time and therefore cause packet collision. To solve this problem, either re-arrange the Stations in question such that the RF signals are mutually sensible by all Stations, or turn-on the RTS/CTS protocol by setting the "RTS threshold" on the "Config" tab to a reasonably small value (300, for

example). There is no guarantee that the packet collision can be entirely eliminated by invoking RTS/CTS protocol, but the severity can be reduced enough to see visible improvement of the link quality.

- Change "Burst time" value to zero when signal strength is marginal or site survey detects other Access Points that are using the same channel or overlapping channels. Overlapping channels are current channel plus/minus four. Maximum number of none overlapping channel is 3 when channel 1, 6 and 11 is used.

5.5 Radio Interference

You may be able to eliminate RF interference by trying the following:

- Find the "channel" used by the source of the interference and coordinate your network and the interference source to be on channels that are at least 20MHz, but preferably 30MHz, apart.

- Reseat the Trimar-AP radio to a location where the interference is minimized for all Station radios in the network.

- Avoid using 2.4GHz cordless phone in the vicinity of the radio

- Keep the computer with the Trimar-AP radio and its associated Station radios away from the microwave oven and large metal objects.

- Consult the dealer or an experienced radio technician for help.

5.6 Settings Appear not to be Modified

Check the version of the software to be upgraded and the software currently running in the Trimar-AP AP radio. If they are the same, you must click "Reset to factory defaults" button on index.html page to make software upgrading take effect. This upgrade effectively overwrites the current software with a different set of factory defaults.

IMPORTANT: please save your configuration to template right after you have any change so that you can recover your settings.

5.7 Technical Support

Please contact OTC Wireless for Technical Support.

E-mail: support@otcwireless.com

Telephone: 1-800-770-6698 (Inside USA), 011-510-490-8288 (Outside USA)

Appendix A: Limited Warranty

The seller warrants to the end user (“Customer”) that this product will be free from defects in workmanship and materials, under normal use and service, for one (1) year from the date of purchase from the seller or its authorized reseller. The seller’s sole obligation under this express warranty shall be, at the seller’s option and expense, to repair the defective product or part, or deliver to Customer an equivalent product or part to replace the defective item.

All products that are replaced will become the property of the seller. Replacement products may be new or reconditioned.

Appendix B: Regulatory Compliance

Federal Communications Commission (FCC) Compliance Information Statement

FCC Part 15 Declaration of Conformity (DoC)

The following equipment:

Product Name: Wireless Ethernet Adapter

Model Number: AirEZY2411-BT WLAN is herewith confirmed to comply with the requirements of FCC Part 15 rules. The 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 ID: MKZWEA11ag03682

A declaration of conformity with the requirements of the directives is available from OTC Wireless, Inc. 48507 Milmont Drive, Fremont, California 94538, USA

1-800-770-6698 (USA); 011-510-490-8288 (International)

FCC Rules and Regulations - Part 15

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. 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.

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 unplugging the equipment and then plugging it back in, the user is encouraged to try to correct the interference by one or more 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.

Operation in frequency band 5150-5250 MHz is restricted to indoor enviroments only.

Caution: Changes or modifications not expressly approved by OTC Wireless could void the user's authority to operate the equipment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Exposure to Radio Frequency Radiation

Caution: The radiated output power of this device is far below the FCC radio frequency exposure limits. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, a minimum separation of 20 cm (8 inches) is recommended between the antenna and any persons.

Industry Canada compliance statement

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

This device complies with Industry Canada specification RSS-210. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference received, including interference that may cause undesired operation of the device.

To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or its transmit antenna) that is installed outdoors is subject to licensing.

The installer of this radio equipment must ensure that the antenna is located or pointed such that it does not emit RF fields in excess of Health Canada limits for the general population; consult Safety Code 6, obtainable from Health Canada’s Web site: www.hc-sc.gc.ca/rpb.

Avis de conformité aux normes d’Industrie Canada

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Cet appareil est conforme à la spécification RSS-210 d'Industry Canada. Son fonctionnement est soumis aux deux conditions suivantes: (1) cet appareil ne peut engendrer aucune interférence et (2) il doit accepter toute interférence qu'il reçoit, y compris celles qui peuvent altérer son fonctionnement.

Pour éviter toute interférence radio au service sous licence, cet appareil est conçu pour être utilisé à l'intérieur et loin des fenêtres afin de garantir une protection optimale. L'équipement (ou son antenne émettrice) est soumis à l'obtention d'une licence s'il est installé à l'extérieur.

L'installateur de cet équipement radio doit veiller à ce que l'antenne soit implantée et dirigée de manière à n'émettre aucun champ HF dépassant les limites fixées pour l'ensemble de la population par Santé Canada. Reportez-vous au Code de sécurité 6 que vous pouvez consulter sur le site Web de Santé Canada: www.hc-sc.gc.ca/rpb

European Community (EC) Directives Conformity and Restrictions

This product is in conformity with the protection requirements of EC Council directives 89/336/EEC, 73/23/EEC, and 1999/5/EC on the approximation and harmonization of the laws of the Member States relating to electromagnetic compatibility, safety of electrical equipment designed for use within certain voltage limits and on radio equipment and telecommunications terminal equipment.

Compliance is indicated by the CE marking CE

Hereby, OTC Wireless, Inc. declares that this Trimar-AP is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

OTC Wireless, Inc. vakuuttaa täten että Trimar-AP tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.

Hierbij verklaart OTC Wireless, Inc. dat het toestel Trimar-AP in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG

Bij deze verklaart OTC Wireless, Inc. dat deze Trimar-AP voldoet aan de essentiële eisen en aan de overige relevante bepalingen van Richtlijn 1999/5/EC.

Par la présente OTC Wireless, Inc. déclare que l'appareil Trimar-AP est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE

Par la présente, OTC Wireless, Inc. déclare que ce Trimar-AP est conforme aux exigences essentielles et aux autres dispositions de la directive 1999/5/CE qui lui sont applicables

Härmed intygar OTC Wireless, Inc. att denna Trimar-AP står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.

Undertegnede OTC Wireless, Inc. erklærer herved, at følgende udstyr Trimar-AP overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF

Hiermit erklärt OTC Wireless, Inc., dass sich dieser Trimar-AP in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/EG befindet". (BMWi)

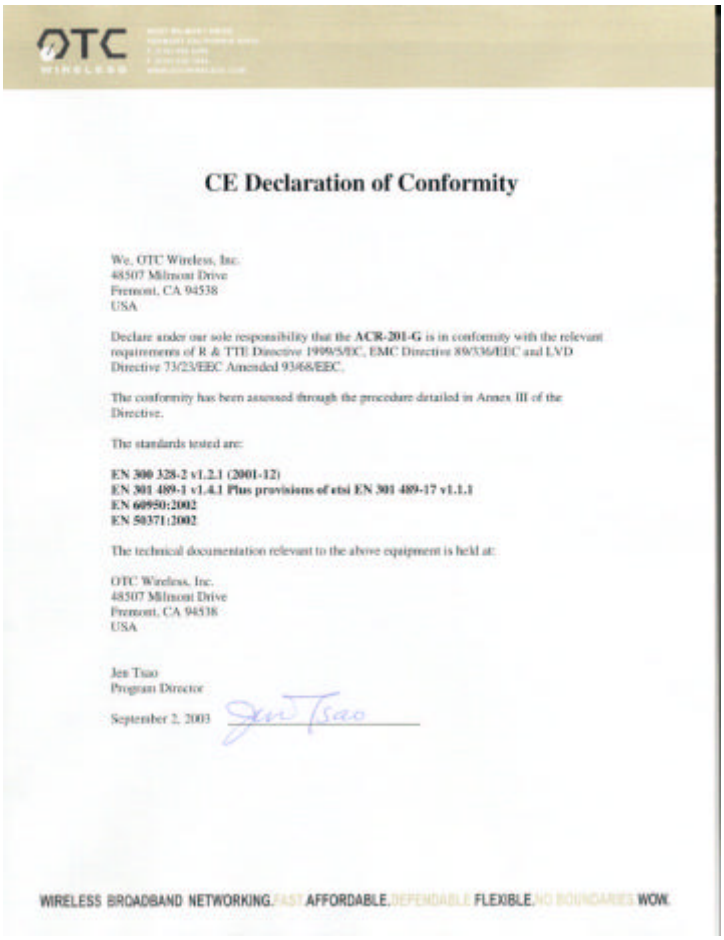
Hiermit erklärt OTC Wireless, Inc. die Übereinstimmung des Gerätes Trimar-AP mit den grundlegenden Anforderungen und den anderen relevanten Festlegungen der Richtlinie 1999/5/EG. (Wien)

? ? ??? ?????S? OTC Wireless, Inc. *???O??????*Trimar-AP *S?? ? ? ?FO????????S ?ƧS??S?ƧO??ƧS????ƧS?ƧS????ƧS???ƧS S????ƧS??ƧS?????ƧS??S???G?S 1999/5/??*

Con la presente OTC Wireless, Inc. dichiara che questo Trimar-AP è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.

Por medio de la presente OTC Wireless, Inc. declara que el Trimar-AP cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE

OTC Wireless, Inc. declara que este Trimar-AP está conforme com os requisitos essenciais e outras provisões da Directiva 1999/5/CE.



CE Declaration of Conformity

We, OTC Wireless, Inc.
48507 Milmont Drive
Fremont, CA 94538
USA

Declare under our sole responsibility that the **ACR-201-G** is in conformity with the relevant requirements of R & TTE Directive 1999/5/EC, EMC Directive 89/336/EEC and LVD Directive 73/23/EEC Amended 93/68/EEC.

The conformity has been assessed through the procedure detailed in Annex III of the Directive.

The standards tested are:

EN 300 328-2 v1.2.1 (2001-12)
EN 301 489-1 v1.4.1 Plus provisions of etsi EN 301 489-17 v1.1.1
EN 60950:2002
EN 50371:2002

The technical documentation relevant to the above equipment is held at:

OTC Wireless, Inc.
48507 Milmont Drive
Fremont, CA 94538
USA

Jen Tsao
Program Director

September 2, 2003

WIRELESS BROADBAND NETWORKING. FAST. AFFORDABLE. DEPENDABLE. FLEXIBLE. NO BOUNDARIES. WOW.

This product satisfies the radio spectrum requirements of EN 300 328-1, the EMC requirements of EN 301 489-17 and the safety requirements of EN 60950.

Notice:

In some countries of operation, using this product may be subject to specific restrictions as listed below. This product is intended only for indoor use. Outdoor usage may require licensing.

France

Restricted frequency band: only channels 10 through 13 (2446.5 MHz through 2483.5 MHz) may be used in France.

Not allowed for outdoor use in public areas.

Bande de fréquences restreinte : seuls les canaux 10 à 13 (2446,5 MHz à 2483.5 MHz) peuvent être utilisés en France.

Utilisation extérieure interdite dans les zones publiques.

Glossary

100/10BaseT An IEEE standard (802.3) for operating 10/100 Mbps Ethernet networks (LANs) with twisted pair cabling and a wiring hub.

Access Point An internetworking device that seamlessly connects wired and wireless networks. Access Points combined with a distributed system support the creation of multiple radio cells that enable roaming throughout a facility.

Ad Hoc Network A network composed solely of stations within mutual communication range of each other (no Access Point connected). The Ad Hoc network offers peer-to-peer connections between workstations, allowing communication between computers within range that have an 802.11

DSSS compatible PC card installed.

BSS *Basic Service Set*. A set of stations controlled by a single coordination function.

Channel A medium used to pass data units that can be used simultaneously in the same volume of space by other channels of the same physical layer, with an acceptably low frame error ratio due to the absence of mutual interference.

CSMA/CA *Carrier Sensing Multiple Access/Collision Avoidance* The medium access control method used by the 802.11 standard. Basically, a radio can start transmitting signal only when no carrier from another radio is sensed and after a randomized wait time has expired.

DTIM *Delivery Traffic Indication Map* The Stations that currently have data held in an AP are identified by a Traffic Indication Map (TIM). This TIM is included in the beacon sent by an AP. DTIM is a special type of TIM. When a DTIM is sent in a beacon frame, it signals that all the broadcast and multicast data held for Stations in PS mode will be sent immediately following the beacon frame.

Encapsulated An Ethernet address mode that treats the entire Ethernet packet as a whole and places it inside an 802.11 frame along with a new header.

EAP *Extended Authentication Protocol*. EAP is an extension to the RADIUS protocol. [IETF RFC 2869] It establishes a framework that allows a variety of authentication methods to be used between a requester and RADIUS.

ESS *Extended Service Set*. A set of one or more interconnected Basic Service Sets (BSSs) and integrated Local Area Networks (LANs) can be configured as an Extended Service Set.

Ethernet The most widely used medium access method, which is defined by the IEEE 802.3 standard. Ethernet is normally a shared media LAN; i.e., all the devices on the network segment share the total bandwidth. Ethernet networks operate at 10Mbps/100Mbps using CSMA/CD to run over 100/10BaseT/100BaseT cables.

Hidden Node The situation where two or more radios in a multiple-radio network fail to detect the RF signals from each other. For example, in a 3-radio network, radio 2 and 3 both have good link to radio 1. Radio 2 and 3, however, are isolated from each other by, say, a metal wall. Radio 2 therefore is a “hidden node” to radio 3, and vice versa. Since an 802.11 network relies on the CSMA/CA protocol to control network access, hidden nodes break down the Carrier Sensing mechanism of controlling medium access because two or more radios cannot sense the carrier from each other.

IEEE 802.11 The IEEE 802.xx is a set of specifications for LANs from the Institute of Electrical and Electronic Engineers (IEEE). Most wired networks conform to 802.3, the specification for CSMA/CD-based Ethernet networks or 802.5, the specification for token ring networks. IEEE 802.11 defines the standard for wireless LANs encompassing three incompatible (non-interoperable) technologies: Frequency Hopping Spread Spectrum (FHSS), Direct Sequence Spread Spectrum (DSSS), and Infrared. IEEE standards ensure interoperability between systems of the same type.

IEEE 802.1X. The "Port Based Network Access Control" requires that a device that accesses a network be first authenticated. [http://www.ieee802.org/1/pages/802.1x.html] The initial connecting point of the network is the "authenticator." It relays the accessing device's credential to a backend "authentication server." The process that presents the request is referred to as the "Supplicant." Only when the authentication server so determines, the network access device will open its port for the requesting device. The authentication server is generally a RADIUS. In order for the request to be granted, the RADIUS must be properly configured to recognize the requester's credential.

Infrastructure Network A wireless network centered about an Access Point. In this environment, the Access Point not only provides communication with the wired network but also mediates wireless network traffic in the immediate neighborhood.

IP *Internet Protocol*. The standard protocol within TCP/IP that defines the basic unit of information passed across an Internet connection by breaking down data messages into packets, routing and transporting the packets over network connections, then reassembling the packets at their destination. IP corresponds to the network layer in the ISO/OSI model.

IP Address An IP address is a 32-bit number that identifies each sender or receiver of information sent across the Internet. An IP address has two parts: the identifier of a particular network on the Internet and an identifier of the particular device (which can be a server or a workstation) within that network.

ISP *Internet Service Provider*. An organization that provides access to the Internet. Small ISPs provide service via modem and ISDN while the larger ones also offer private line hookups (T1, fractional T1, etc.).

LAN *Local Area Network*. A communication network that serves users within a defined geographical area. The benefits include the sharing of Internet access, files, and equipment, such as printers and storage devices. Special network cabling (100/10BaseT) is often used to connect the PCs together.

NAT *Network Address Translation*. The translation of an Internet Protocol address (IP address) used within one network to a different IP address known within another network. One network is designated the internal network and the other is the external. The internal network then appears as one entity to the outside world.

PCMCIA *Personal Computer Memory Card International Association*. This Association develops standards for PC cards, formerly known as PCMCIA cards. These cards are available in three types, and are about the same length and width as credit cards. However, the different cards range in thickness from 3.3 mm (Type I) to 5.0 mm (Type II) to 10.5 mm (Type III). These cards can be used for various functions, including memory storage, landline modems, and wireless modems.

PS Mode *Power Save* Mode. This mode is recommended for devices where power consumption is a major concern, such as battery-powered devices.

RADIUS *Remote Authentication Dial-in User Service.* This service generally authenticate users by their credentials. The host of a user uses the RADIUS protocol to send the credential of the user to a designated RADIUS server. The user will be granted access rights based on the privilege configured in the RADIUS server. A Microsoft article provides a good review: "RADIUS Protocol Security and Best Practices." [http://www.microsoft.com/windows2000/techinfo/administration/radius.asp]

Radio Frequency *RF*, Terms: GHz, MHz, Hz —The international unit for measuring frequency is Hertz (Hz), equivalent to the older unit of cycles per second. One megahertz (MHz) is one Million-Hertz. One gigahertz (GHz) is one Billion-Hertz. The standard U.S. electrical power frequency is 60 Hz, the

AM broadcast radio frequency band is 0.55–1.6 MHz, the FM broadcast radio frequency band is 88–108 MHz, and wireless 802.11 LANs operate at 2.4GHz.

SSID *Service Set ID*. A group name shared by every member of a wireless network.

Station The Station is the component that connects a host computer or device to the wireless medium. It may be referred to as the Wireless Network Adapter or the Wireless Network Interface Card.

WPA *Wireless Protected Access*. WPA is the current industry-agreed requirement for secured wireless 802.11 communications. It is a subset of the upcoming 802.11i standard. It comprises 802.1X and EAP based access control and communications confidentiality based on TKIP data encryption. For more details, visit Wi-Fi Alliance Web page: http://www.wifialliance.com/OpenSection/protected_access.asp.

WEP *Wired Equivalent Privacy*. The optional cryptographic confidentiality algorithm specified by 802.11 used to provide data confidentiality that is subjectively equivalent to the confidentiality of a wired LAN medium that does not employ cryptographic techniques to enhance privacy.