Fusion 50 Access Point

Quick Start Guide

Part Number: 001286, Rev. B

Product Description

Fusion 50 managed Wi-Fi® Access Points (APs) work in conjunction with the Fusion 300 wireless controller (required) to provide simple, secure voice and data 802.11b/g access for any SMB (Small- to Medium-sized Business). In addition, features of a Fusion 50 provide an SMB with all the power of an enterprise class solution.

Furthermore, you can combine up to 25 Fusion 50 APs to provide support for 250 Wi-Fi users. The Fusion 50 is Wi-Fi Alliance certified for WPA and WPA2 authentication and encryption. It can serve as a network access device, a Wi-Fi IDS/IPS scanner, or both.

Packaging

- Fusion 50 access point
- Power adapter (5V)
- Power cord
- Detachable antennas (two)
- 1.5" sheet metal screws (two)
- 1" wood sheet rock screws (two)
- Plastic wall anchors (two)
- Warranty card
- Fusion 50 Access Point Quick Start Guide

LEDs

The Fusion 50 includes four LEDs on its front panel to provide a visual indication of the operation status of the access point.

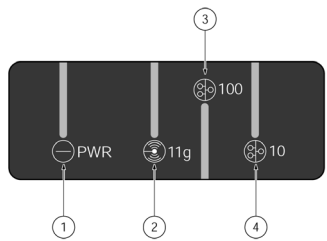


Table 1 *Fusion 50 LEDs*

LED	Description
1: PWR	• Solid Green: Power On • Off: Power Off
2: 11g	• Solid Green: WLAN On • Blinking Green: Receiving/transmitting data from wireless LAN • Off: Radio disabled.
3: 100	• Solid Green: LAN On • Blinking Green: Receiving/transmitting data from a 100M device • Off: LAN Off
4: 10	• Solid Green: LAN On • Blinking Green: Receiving/transmitting data from a 10M device • Off: LAN Off

Ports

The Fusion 50 includes three ports to provide connection points for the power and Ethernet connection.

Note: The Fusion 50 is IEEE 802.3af compliant, so it can provide power to the unit by using an Ethernet connection that utilizes power-sourcing equipment (PSE). Ensure that the connecting device is Power over Ethernet (PoE) IEEE compliant if you intend to use an Ethernet connection for power.

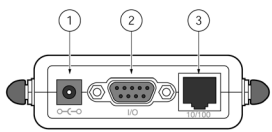


Table 2 *Fusion 50 Ports*

Port	Description
1: (Power)	Power input
2: I/0	DB9 serial port
3: 10/100	Ethernet 10/100 RJ-45 port

Back Panel

The Fusion 50 back panel includes a hole to access the reset button and product information that is located on two labels.

Reset Button

Use the reset button to clear an AP's configuration back to its factory defaults. To restore the factory default, use a small pin to press and hold the reset button for 10 seconds while the AP has power applied.

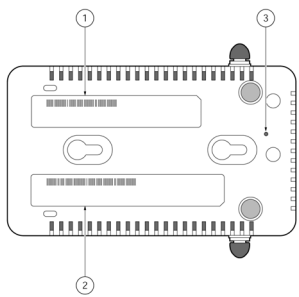


Table 3 *Fusion 50 Back Panel*

Item	Description
1	This label includes the MAC address of the unit.
2	This label includes the serial number of the unit.
3	This hole provides access to the reset button.

Specifications

Table 4 *General Specifications*

Specification	Description
Dimensions	L 4.8" (122.31 mm) X W 2.9" (73 mm) X D .9" (23 mm)
Standard support	• IEEE802.11b • IEEE802.11g • IEEE802.3 • IEEE802.3af • IEEE802.3u
Max. Bandwidth: Ethernet	• Full Duplex: 200Mbps (100BASETX), 20Mbps (10BaseT) • Half Duplex: 100Mbps (100BaseTX), 10Mbps (10BaseT)
Max. Bandwidth: Wireless	1, 2, 5.5, 6, 9, 11, 12, 24, 36, 48, and 54 Mbps
Wireless Radio	Data Rate: 1, 2, 5.5, 6, 9, 11, 12, 24, 36, 48,and 54 Mbps Signal Frequency: 2.4Ghz to 2.5Ghz OFDM with BPSK, QPSK, 16QAM, 64QAM, DBPSK, DQPSK, CCK Encryption: 64bit / 128bit and 152bit WEP data encryption
Software/Firmware	• DHCP Client • Wireless STA (client) list • MAC Address Filter • Rogue AP detection • Web-based configuration via your browser • CLI Support • Firmware upgrade via Web • Automatic remote FTP firmware upgrade • Reset to default by Web UI
Wireless Settings	• SSID / Multiple SSID with VLAN • Channel Selection • Transmission Rate (Best, 54, 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2, 1) in Mbps • Transmit power (Full, Half, Quarter, Eighth, Minimum) • Beacon Interval (20-300) milliseconds: 100 default • RTS/CTS Threshold (0-2347) bytes: 2347 default

Table 4 *General Specifications*

Specification	Description
Security	WEP settings: 802.1x, Open, Shared, and Open & Shared • Keys input type: HEX / ASCII • Keys length: (64-bit, 128-bit, 152-bit, and 256-bit) • Default WEP Key to use (1-4) WPA setting: Cipher type: TKIP • Shared Key • Group Key Update Interval: 300 WPA-PSK settings: Cipher type TKIP • PassPhrase • Group Key Update Interval: 300 WPA2 settings: Cipher Type AES/CCMP • Shared Key • Group Key Update Interval: 300 WPA2-PSK settings: Cipher type AES/CCMP • PassPhrase • Group Key Update Interval: 300

Table 5 *Power*

Item	Description
AC Power input	100-240 VAC 1.0A Max. 50/60 Hz
DC Power input	5V/2.4A

Table 6 *Environmental*

Item	Specification	Description
Operating	Operating Temperature	0~40ºC (32~104ºF)
	Relative Humidity	10%~90% non-condensing
Storage	Temperature	-25~75ºC (-13~167ºF)
	Relevant Humidity	0%~95% non-condensing
	Altitude	Sea level to 40,000 feet

Installation

Prerequisites

The following are the prerequisites that you need to adhere to before attempting to install the Fusion 50 access point:

- For ease of cable connections, ensure that the access point is near a hub or computer, as well as a reliable power source.
- Ensure that the access point is away from any equipment that might cause radio signal interference, such as, transformers, heavy-duty motors, fluorescent lights, microwave ovens, refrigerators, or other.

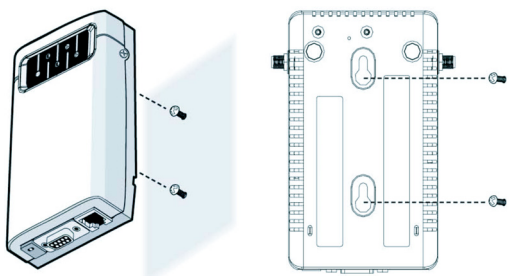
Note: Do not place the Fusion 50 on any type of metal surface.

Mounting the Fusion 50 Access Point

Do the following to mount an access point:

1. Find a solid mounting point on the wall, such as a stud or main building member. You may need to use a stud finder to find a solid wooden structure.
2. Place marks on the wall that correspond to the distance between the two mounting holes located at the back of the AP. The holes are approximately 2.5" apart.

3. Use a drill (approximately 3/16 [4.75 millimeters] drill bit) to make a hole into the wall where you made the marks.
4. Insert the wall anchors (if necessary).
5. Attach the mounting screws to the wall where you made the holes.
6. Mount the unit onto the wall by fitting the mounting holes to the screws.



Connections

You can provide power to the Fusion 50 by either using the power adapter (included) or through an Ethernet cable (not included) connection that utilizes power-sourcing equipment (PSE).

Connecting the Power Cable to the Fusion 50

Do the following to connect the power cable to the Fusion 50:

1. Connect one end of the power cable (included) to the power outlet of the Fusion 50 Access Point.
2. Connect the other end of the cable to an AC power outlet.

   The Power LED turns green as soon as power is applied.

Connecting the Ethernet Cable to the Fusion 50

Note: If you intend to use an Ethernet connection for power, make sure that the connecting device is Power over Ethernet (PoE) IEEE compliant.

Do the following to connect an Ethernet cable to the Fusion 50:

1. Connect a RJ45 Ethernet (straight-through) cable to the LAN port of the Fusion 50.
2. Connect the other end of the cable to a hub or switch.

   The 11g LED flashes green when a LAN connection establishes.

Finding Product Documentation

The documentation CD shipped with each unit includes the following documents:

- CompleteMobility Express™ Web User Interface Reference Manual
- CompleteMobility Express™ CLI Reference Guide
- Fusion 300 Wireless Controller Quick Start Guide (also printed)
- Fusion 300 Wireless Controller Hardware Installation Guide
- Fusion 50 Access Point Quick Start Guide (also printed)
- Fusion 300 and CompleteMobility Express Release notes

To view PDF files, use Adobe Acrobat® Reader® 5.0, or newer. Obtain Acrobat Reader free from the Adobe website:

http://www.adobe.com/products.

Find additional documentation at the U4EA support site: www.u4eatech.com/support.

Downloading the Latest Documentation

Updated versions of product documentation can be downloaded from the support Web site. To download any information from the support Web site:

1. Go to URL https://support.u4eatechinc.com/U4EACustomerPortal/LoginForCustomerPortal.asp
2. Login to your account using your login and password. If authentication is denied, contact support at support@u4eatech.com.
3. Once logged in, browse through the items available under "My Downloads" and double-click on the document name to start the download.
4. Contact support at support@u4eatech.com for more information.

Regulatory

The U4EA Wireless 11b/g PoE Access Point (Fusion 50) must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product.

This product contains encryption. It is unlawful to export out of the U.S. without obtaining a U.S. Export License.

This product does not contain any user serviceable components. Any unauthorized product changes or modifications will invalidate U4EA's warranty and all applicable regulatory certifications and approvals.

Only antennas specified for your region by U4EA can be used with this product. The use of external amplifiers or non-U4EA antennas may invalidate regulatory certifications and approvals.

Declaration of ROHS Compliance

U4EA Technologies Inc. hereby declares that the product Fusion 50 access point has been designed and manufactured in accordance with Directive 2002/95/EC of the European Commission on the restriction of certain hazardous substances in electrical and electronic equipment. (ROHS)

Caution: Exposure To Radio Frequency Radiation

FCC Warning

This device generates and radiates radio-frequency energy. In order to comply with FCC radio-frequency exposure guidelines for an uncontrolled environment, this equipment must be installed and operated while maintaining a minimum body to antenna distance of 20 cm (approximately 8 in.).

Canada Warning

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

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body.

EU Warning

This product must maintain a minimum body to antenna distance of 20 cm. Under these conditions this product will meet the Basic Restriction limits of 1999/519/EC [Council Recommendation of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz)].

USA — Radio Frequency Requirements

This device must not be co-located or operated in conjunction with any other antenna or transmitter. This device is for indoor use only when using channels 36, 40, 44 or 48 in the 5.15 to 5.25 GHz frequency range.

High power radars are allocated as primary users of the 5.25 to 5.35 GHz and 5.65 to 5.85 GHz bands. These radar stations can cause interference with and/or damage this device.

Industry Canada — Radio Frequency Compliance

This device complies with RSS 210 of Industry Canada.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of this device.

L'utilisation de ce dispositif est autorisée seulement aux conditions suivantes: (1) il ne doit pas produire de brouillage et (2) l'utilisateur du dispositif doit être prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

The term "IC" before the equipment certification number only signifies that the Industry Canada technical specifications were met.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that required for successful communication. 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.

Pour empecher que cet appareil cause du brouillage au service faisant l'objet d'une licence, il doit etre utilize a l'interieur et devrait etre place loin des fenetres afin de Fournier un ecram de blindage maximal. Si le matriel (ou son antenne d'emission) est installe a l'exterieur, il doit faire l'objet d'une licence.

High power radars are allocated as primary users of the 5.25 to 5.35 GHz and 5.65 to 5.85 GHz bands. These radar stations can cause interference with and/or damage this device.

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

USA—Federal Communications Commission (Fcc) EMC Compliance

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 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.

The user may find the following booklet prepared by the Federal Communications Commission helpful: The Interference Handbook. This booklet is available from the U.S. Government Printing Office, Washington, DC 20402. Stock No. 004-000-0034504.

U4EA is not responsible for any radio or television interference caused by unauthorized modification of the devices included with this U4EA Wireless 11b/g PoE Access Point, Model Fusion 50, or the substitution or attachment of connecting cables and equipment other than specified by U4EA.

The correction of interference caused by such unauthorized modification, substitution or attachment will be the responsibility of the user.

Changes or modifications not expressly approved by U4EA could void the user's authority to operate this equipment.

Manufacturer's FCC Declaration of Conformity

Model Number: Fusion 50
Alan Hutchinson
Manager, Hardware QA
U4EA Technologies, Inc
Fremont, CA
September, 16 2008
Equipment Type: WLAN Access Point
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.

FC	Fusion 50 11b/g PoE Access Point

Safety Compliance Notice

This device has been tested and certified according to the following safety standards and is intended for use only in Information Technology Equipment which has been tested to these or other equivalent standards:

- EN60950-1
- IEC 60950-1
- UL 60950-1

INDUSTRY CANADA — RF COMPLIANCE

This device complies with RSS 210 of Industry Canada.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of this device.

L'utilisation de ce dispositif est autorisée seulement aux conditions suivantes: (1) il ne doit pas produire de brouillage et (2) l'utilisateur du dispositif doit être prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

The term "IC" before the equipment certification number only signifies that the Industry Canada technical specifications were met.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that required for successful communication. 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.

Pour empecher que cet appareil cause du brouillage au service faisant l'objet d'une licence, il doit etre utilize a l'interieur et devrait etre place loin des fenetres afin de Fournier un ecram de blindage maximal. Si le matriel (ou son antenne d'emission) est installe a l'exterieur, il doit faire l'objet d'une licence.

High power radars are allocated as primary users of the 5.25 to 5.35 GHz and 5.65 to 5.85 GHz bands. These radar stations can cause interference with and/or damage this device.

This device must not be co-located or operated in conjunction with any other antenna or transmitter

Industry Canada - Emissions Compliance Statement

This Class B digital apparatus complies with Canadian ICES-003.

Avis de Conformité à la Réglementation d'Industrie Canada

Cet appareil numérique de la classe B est conform à la norme NMB-003 du Canada.

EU Declaration of Conformity

We, the undersigned, on behalf of U4EA Technologies, Inc., hereby declare that the products listed below conform to the relevant provisions of the legislation, as well as pertinent clauses of the standards and other normative documents mentioned herein.

Type of product:

Access Point

Product name/model:

Fusion 50

Intended use:

Provide effective provisioning of converged VOIP and data services. For public and private use.

Legislation

- 1999/5/EC

Identity Description

EU

- EN 300 328 CE
- EN 301 489 CE
- EN 301 893 CE
- EN 60950-1 Safety
- IEC 60950-1 Safety

Alan Hutchinson
Manager, Hardware QA
U4EA Technologies, Inc
Fremont, CA
October 8, 2008

EU Compliance

This equipment may be operated in							
AT	BE	CY	CZ	DK	EE	FI	FR
DE	GR	HU	IE	IT	LV	LT	LU
MT	NL	PL	PT	SK	SI	ES	SE
GB	IS	LI	NO	CH	BG	RO	TR

Intended use: IEEE 802.11b/g radio LAN device

NOTE: To ensure product operation is in compliance with local regulations, select the country in which the product is installed.

Table 7

Cesky [Czech]	U4EA Coporation timto prohla.uje, .e tento RLAN device je ve shod. se zakladnimipo.adavky a dal.imi p.islu.nymi ustanovenimi sm.rnice 1999/5/ES.
Dansk [Danish]	Undertegnede U4EA erklarer herved, at folgende udstyr RLAN device overholder de vasentlige krav og ovrige relevante krav i direktiv 1999/5/ EF.
Deutsch [German]	Hiermit erklart U4EA , dass sich das Gerat RLAN device in Ubereinstimmung mit den grundlegenden Anforderungen und den ubrigen einschlagigen Bestimmungen der Richtlinie 1999/5/EG befindet.
Eesti [Estonian]	Kaesolevaga kinnitab U4EA seadme RLAN device vastavust direktiivi1999/5/EU pohinouetele ja nimetatud direktiivist tulenevatele teistele asjakohastele satetele.
English	Hereby, U4EA , declares that this RLAN device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

Table 7

Espanol [Spanish]	Por medio de la presente U4EA declara que el RLAN device cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ U4EA Corporation ΔΗΛΩΝΕΙ ΟΤΙ RLAN device ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
Francais [French]	Par la presente U4EA declare que l'appareil RLAN device est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
Italiano [Italian]	Con la presente U4EA dichiara che questo RLAN device e conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar .o U4EA deklar., ka RLAN device atbilst Direkt.vas 1999/5/EK b.tiskaj.m pras.b.m un citiem ar to saist.tajiem noteikumiem.
Lietuviu [Lithuanian]	Šiuo U4EA Corporation deklaruoja, kad šis RLAN device atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
Nederlands [Dutch]	Hierbij verklaart U4EA dat het toestel RLAN device in overeenstemming is met de essentiele eisen en de andere relevante bepalingen van richtlijn1999/5/EG.
Malti [Maltese]	Hawnhekk, U4EA Corporation, jiddikjara li dan RLAN device jikkonforma malhtigijiet essenzjali u ma provvedimenti ohrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.
Magyar [Hungarian]	Alulírott, U4EA Corporation nyilatkozom, hogy a RLAN device megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak.
Polski [Polish]	Niniejszym U4EA o.wiadcza, .e RLAN device jest zgodny z zasadniczymi wymogami oraz pozosta.ymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
Portugues [Portuguese]	U4EA declara que este RLAN device esta conforme com os requisitos essenciais e outras disposicoes da Directiva 1999/5/CE.

Table 7

Slovensko [Slovenian]	U4EA Corporation izjavlja, da je ta RLAN device v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	U4EA Corporation týmto vyhlasuje, že RLAN device spĺňa základné požiadavkya všetky príslušné ustanovenia Smernice 1999/5/ES.
Suomi [Finnish]	U4EA vakuuttaa taten etta RLAN device tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sita koskevien direktiivin muiden ehtojen mukainen.
Svenska [Swedish]	Harmed intygar U4EA att denna RLAN device star I overensstammelse med de vasentliga egenskapskrav och ovriga relevanta bestammelser som framgar av direktiv 1999/5/EG.
Íslenska [Icelandic]	Hér með lýsir U4EA Corporation yfir því að RLAN device er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC.
Norsk [Norwegian]	U4EA erklarer herved at utstyret RLAN device er i samsvar med de grunnleggende krav og ovrige relevante krav i direktiv 1999/5/EF.

EU - Restrictions For Use In The 2.4GHZ Band

This device may be operated indoors or outdoors in all countries of the European Community using the 2.4 GHz band: Channels 1–13, except where noted below.

- In Italy the end-user must apply for a license from the national spectrum authority to operate this device outdoors.
- In Belgium outdoor operation is only permitted using the 2.46–2.4835GHz band: Channel 13
- In France outdoor operation is only permitted using the 2.4–2.454GHz band: Channels 1 – 7.

EU - Restrictions For Use in the 5 GHZ Band

Table 8

Allowed Frequency	Allowed Channel Numbers	Countries
5.15–5.35 GHz	36, 40, 44, 48, 52, 56, 60, 64	Czech Republic, France
5.15–5.35 & 5.470–5.725 GHz	36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 112, 116, 120, 124, 128, 132, 136, 140	Austria, Belgium, Bulgaria, Cyprus, Denmark, Estonia, Finland, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, U.K.

This device may be not be operated outdoors when using the bands 5150–5350 MHz (Channels 36, 40, 44, 48, 52, 56, 50, 64). In Italy the end-user must apply for a license from the national spectrum authority to operate this device outdoors.

- To remain in conformance with European spectrum usage laws for Wireless LAN operation, the above 5 GHz channel limitations apply. The user should check the current channel of operation. If operation is occurring outside of the allowable frequencies as listed above, the user must cease operating the Access Point at that location and correct the configuration of the channels used before resuming operation.
- The 5 GHz Turbo mode feature is not allowed for operation in any European Community country.
- This device must be used with the radar detection feature required for European Community operation in the 5 GHz bands. This device will avoid operating on a channel occupied by any radar system in the area. The presence of nearby radar operation may result in temporary interruption in communications of this device. The Access Point's radar detection feature will automatically restart operation on a channel free of radar. You may consult with the local technical support staff responsible for the wireless network to ensure the Access Point device(s) are properly configured for European Community operation.