



---

# *Fusion 70 Access Point*

## *Installation Guide*

Part Number: 001605, Rev. A

---





# Introduction

The Fusion 70 Access Point is a reliable, high-speed wireless device that offers secure communication access for both voice and data IEEE 802.11n transmissions for any SMB (Small- to Medium-sized Business). With a frequency of 2.4 GHz (802.11 b/g/n), this innovative and cost-effective AP provides clients a fast and reliable network connection.

You can provide power to the access point either by using a single, standard IEEE 802.3af PoE connection or by using direct power connection. In addition, the Fusion 70 Access Point supports all security suites, including both WPA and WPA2 authentication and encryption methods.




## Packaging

- Fusion 70 Access Point
- Power adapter (5V) and cord
- Mounting kit, including mounting bracket and screws
- Adhesive rubber feet
- Three external antennas (optional)
- Warranty card

## Safety Precautions

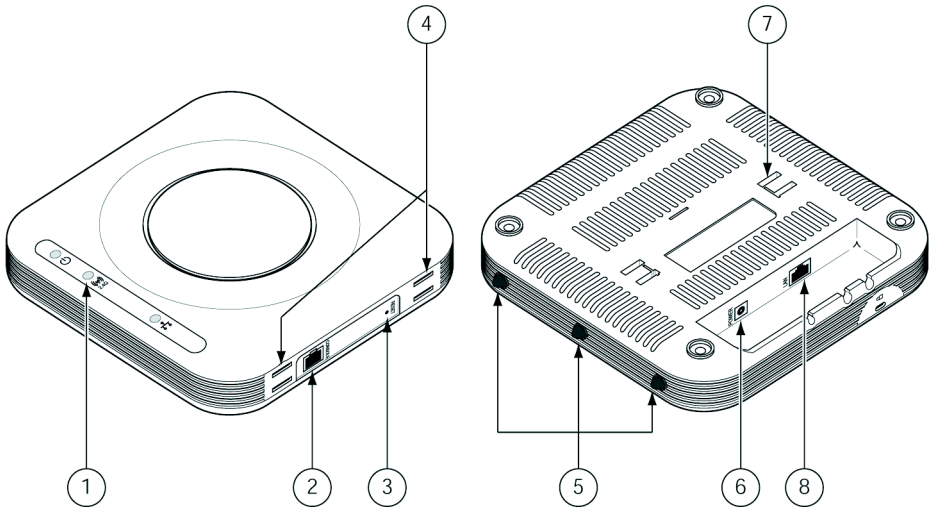
For safe and efficient use, read the following information before working on or using the Fusion 70.

**Table 1**      *Safety Precautions*

 <p><b>WARNING</b></p>	<p>Before working on this equipment, be aware of good safety practices and the hazards involved with electrical circuits.</p>
 <p><b>WARNING</b></p>	<p>To reduce risk of fire hazard and electric shock, do not install the unit near a damp location.</p>
 <p><b>CAUTION</b></p>	<p>To reduce the risk of fire, use only number 26 AWG or larger UL Listed or CSA Certified telecommunication line cord for all network and telecommunication connections.</p>

- **Do not** expose the product to liquid or moisture.
- **Do not** expose the product to extreme temperature.
- **Do** keep the product in a clean and dust-free location. Use only a soft, damp cloth to clean the product.

# Product Description



**Table 2**      *Features*

Item	Feature	Description
1	LEDs	These three indicators display power and/or link activity.
2	Console Port	This port provides a serial interface for the AP.
3	Reset Button	This button provides a mechanism to allow you to restore the AP back to its factory default settings.
4	Desktop Slots	These slots allow you to mount the unit to a bracket (included), so that you can stand it up on a desktop.
5	Antenna Connectors	These three RSMA antenna connectors allow you to connect external antennas (optional).
6	Power	This is a power connection point.
7	Wall Mount & Desktop Slots	These slots allow you to mount the unit to a bracket (included), so that you can install it on a wall.
8	Ethernet Port	This is an RJ-45 10BASE-T/100BASE-TX/1000BASE-T port with IEEE 802.3af PoE, auto-negotiating.

## Power and Environmental

**Table 3** *Power and Environmental*

AC power	Input voltage	90-264 V AC
	Frequency	47-63 Hz
Operating	Operating Temperature	32 to 104°F (0-40C)
	Relative Humidity	5% to 95% (non-condensing)

## LEDs

The Fusion 70 Access Point has the following three LEDs on to provide a visual indication of the operation status of the AP.

**Table 4** *LEDs*

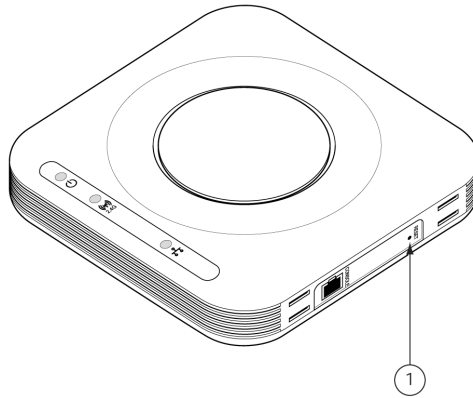
LED	Description
Power	<ul style="list-style-type: none"> <li>• Solid green: Power on</li> <li>• Off: Power off</li> <li>• Solid amber: CPU or system failed</li> <li>• Blinking amber: System initializing or resetting (software self-testing)</li> </ul>
2.4G	<ul style="list-style-type: none"> <li>• Solid green: Good link at 2.4GHz</li> <li>• Blinking: Receiving/transmitting data</li> <li>• Off: No data transfer</li> </ul>
Link/Activity	<ul style="list-style-type: none"> <li>• Solid yellow: Good Link on 100Mbps</li> <li>• Blinking yellow: Receiving/transmitting data at 100M</li> <li>• Solid green: Good link on 1000Mbps</li> <li>• Blinking green: Receiving/transmitting data at 1000Mbps</li> <li>• Off: No Link</li> </ul>

## PoE Compliant

The Fusion 70 Access Point is IEEE 802.3af compliant, so it can provide power to the unit by using an Ethernet connection that utilizes power-sourcing equipment (PSE). If you intend to use an Ethernet connection for power, ensure that the connecting device is Power over Ethernet (PoE) IEEE compliant.

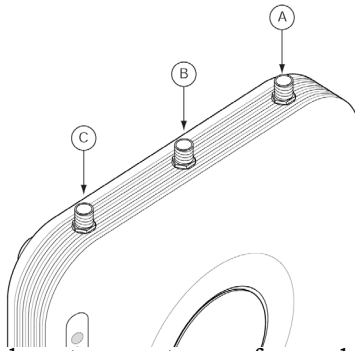
## Reset Button

Use the reset button to clear an AP's configuration and set it 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.



## Antenna

The Fusion 70 Access Point comes standard with three internal antennas. However, the AP also includes three external antenna connectors that allow you to connect external antennas (optional) to them to increase the range of each radio.



[Table 5](#) describes which antennas to use for each mode.

**Table 5**      *Antenna Options*

Mode	Antennas Used
2x3	A, B and C
2x2	A and C (not supported)
1x1	A (not supported)

# Specifications

**Table 6**      *General Specifications*

Specification	Description
Dimensions	(L) 7.8" (19.7 cm) X (W) 7.8" (19.7cm) X (H) 1.8" (4.5cm)
Standards support	<ul style="list-style-type: none"> <li>• IEEE 802.3ab</li> <li>• IEEE 802.3af</li> <li>• IEEE 802.11b</li> <li>• IEEE 802.11g</li> <li>• IEEE 802.11n</li> </ul>
Data Rates	<ul style="list-style-type: none"> <li>• 802.11g: 54, 48, 36, 24, 18, 12, 9 and 6 Mbps</li> <li>• 802.11b: 11, 5.5, 2 and 1 Mbps</li> <li>• 802.11n: MCS 0 to 15 for HT20MHz, 6.5-130 Mbps MCS 0 to 15 for HT40MHz,</li> </ul>
Frequency Band	<ul style="list-style-type: none"> <li>• 802.11b/g/n: 2.4–2.484 GHz</li> </ul>
Modulation Technique	<ul style="list-style-type: none"> <li>• 802.11b: DSSS (Direct Sequence Spread Spectrum)</li> <li>• 802.11g/n: OFDM (Orthogonal Frequency Division Multiplexing) and DSSS</li> </ul>
Software/ Firmware	<ul style="list-style-type: none"> <li>• DHCP Client</li> <li>• Wireless STA (client) list</li> <li>• MAC Address Filter</li> <li>• Rogue AP detection</li> <li>• Web-UI Support</li> <li>• CLI Support</li> <li>• Firmware upgrade via Web UI</li> </ul>
Security	<p>WEP settings: 802.1x, Open, Shared, and Open &amp; Shared</p> <ul style="list-style-type: none"> <li>• Keys input type: HEX / ASCII</li> <li>• Keys length: (64-bit, 128-bit, 152-bit, and 256-bit)</li> <li>• Default WEP Key to use (1-4)</li> </ul> <p>WPA setting: Cipher type: TKIP</p> <ul style="list-style-type: none"> <li>• Shared Key</li> <li>• Group Key Update Interval: 300</li> </ul> <p>WPA-PSK settings: Cipher type TKIP</p> <ul style="list-style-type: none"> <li>• PassPhrase</li> <li>• Group Key Update Interval: 300</li> </ul> <p>WPA2 settings: Cipher Type AES/CCMP</p> <ul style="list-style-type: none"> <li>• Shared Key</li> <li>• Group Key Update Interval: 300</li> </ul> <p>WPA2-PSK settings: Cipher type AES/CCMP</p> <ul style="list-style-type: none"> <li>• PassPhrase</li> <li>• Group Key Update Interval: 300</li> </ul>

# Installation

## Prerequisites

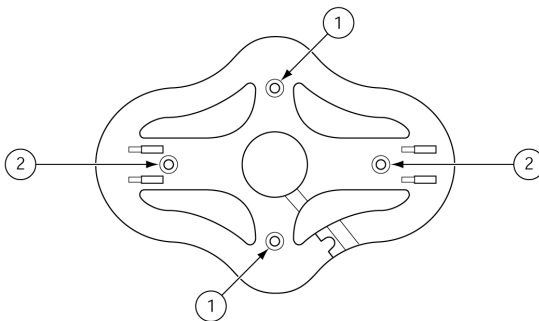
The following are the prerequisites that you need to adhere to before attempting to install the Fusion 70 Access Point:

- 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, radar, heavy-duty motors, microwave ovens, refrigerators, or other.

## Mounting the Fusion 70 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 mounting holes located on the mounting bracket. Use the following guidelines:
  - Point the mounting bracket tabs upward.
  - If mounting to drywall, use the four screws and wall anchors.
  - If mounting to an EU electrical box (60.3mm), insert two screws (included) into the holes marked “1” (shown below).
  - If mounting to a US electrical box (83.3mm), insert two screws (included) into the holes marked “2” (shown below).



3. Connect the Ethernet cable (to use as either power and/or LAN connection) to the Ethernet port on the bottom of the AP.

If this is a PoE connection, the Power and Link LED flashes green.



4. Connect the power cable to the power connection located on the bottom of the AP.

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

5. Mount the AP using the mounting slots located at the bottom of the AP.

---

**Note:** You can also use the slots on the side of the AP if you cannot mount the AP using the slots on the bottom of the AP.

---

## Desktop Mounting

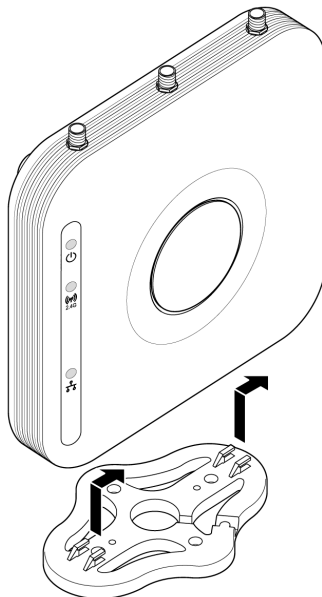
Do the following to place the AP on a table or desktop:

1. Insert the tabs on the table stand into the slots on the side of the AP. Align the cable routing cutout toward the upper part of the stand.
2. Lock the stand to the AP by sliding the stand back and forward.
3. Place the AP on the table or desktop.
4. Connect the Ethernet cable (for either power or LAN connection) to the Ethernet port on the bottom of the AP.

The Link LED flashes green when a LAN connection establishes.

5. Connect the power cable to the power connection also located on the bottom of the AP.

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



---

## Finding Product Documentation

The documentation CD with this unit includes the following documents:

- *CompleteMobility Express Web User Interface Reference Manual*
- *CompleteMobility Express CLI Reference Guide*
- *Fusion 70 Installation Guide (also printed)*
- *Fusion 300 Controller Hardware Reference Guide*
- *Fusion 300 and CompleteMobility Express Release Note*

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>.

You can find additional documentation at the U4EA support site:

[www.u4eatech.com/support](http://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](mailto: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](mailto:support@u4eatech.com) for more information.

# Regulatory Information

The U4EA Wireless 11b/g/n PoE Access Point (Fusion 70) 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 70 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)

## USA—Federal Communications Commission (FCC) EMC Compliance

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. This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

### **IMPORTANT NOTE: FCC Radiation Exposure Statement:**

This equipment complies with FCC / IC RSS-102 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.

**FCC NOTICE:** To comply with FCC part 15 rules in the United States, the system must be professionally installed to ensure compliance with the Part 15 certification. It is the responsibility of the operator and professional installer to ensure that only certified systems are deployed in the United States. The use of the system in any other combination (such as co-located antennas transmitting the same information) is expressly forbidden.

This device has been designed to operate with an antenna having a maximum gain of 3 dBi. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms

Only the antennas listed below are allowed to be used with the radio.

Ant	Antenna Type	Model Name	Product description	2.4 GHz Gain (dBi)	Tx/Rx mode	Remark
1	Monopole Ant.	TWX-145XRSXX-361	2dBi Dual-Band Omni Antenna	2	2T3R	Main Ant. for test
2	PCB Ant.	TFF-A015MPAX-361	Integrated PCB Antenna	3	2T3R	Main Ant. for test

---

## Manufacturer's FCC Declaration of Conformity

Model Number: Fusion 70


U4EA Technologies, Inc

Fremont, CA

January 7, 2009

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.

	Fusion 70 11n b/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 empêcher que cet appareil cause du brouillage au service faisant l'objet d'une licence, il doit être utilisé à l'intérieur et devrait être placé loin des fenêtres afin de fournir un écran de blindage maximal. Si le matériel (ou son antenne d'émission) est installé à l'extérieur, 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 conforme à la norme NMB-003 du Canada.

---

### Canada C Request

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 the device.

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

This device has been designed to operate with an antenna having a maximum gain of 3 dBi. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

The County Code Selection feature is disabled for products marketed in the US/Canada

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

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

Only the antennas listed below are allowed to be used with the radio.

# 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 70

**Intended use:**

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

**Legislation**

- 1999/5/EC

## EU Compliance



Usage restrictions apply.  
See documentation

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

## Identity Description

EU

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

IEC 60950-1 Safety

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.

Cesky [Czech]	U4EA Coporation timto prohla.uje, .e tento RLAN device je ve shod. se zakladnimipo.adavky a dal.imi p.islu.nyrimi ustanovenimi sm.rnice 1999/5/ES.
Dansk [Danish]	Undertegnede U4EA erklarer herved, at folgende udstyr RLAN device overholder de vasentlige krav og ovrigte 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.
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 essentiële 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 oħrajn rilevanti li hemm fid-Dirrettiva 1999/5/EC.
Magyar [Hungarian]	Alulírott, U4EA Corporation nyilatkozom, hogy a RLAN device megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EC irányelv egyéb előírásainak.
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.
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 požiadavky 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 ovrigte 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.

## BRAZIL RF COMPLIANCE

Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não causar interferência a sistema operando em caráter primário.

## KOREA RF COMPLIANCE

This device may cause radio interference during its operation. Therefore service in relation to human life security is not available.



454 Kato Terrace  
Fremont, CA 94539  
[www.u4eatech.com](http://www.u4eatech.com)