EU Directive 1999/5/EC - Compliance Information for the AIR-AP1010-E-K9, AIR-AP1020-E-K9 and AIR-AP1030-E-K9 IEEE 802.11 a/b/g Access Point

August, 2006

This document contains compliance information for Cisco products AIR-AP1010-E-K9, AIR-AP1020-E-K9 and AIR-AP1030-E-K9 that is relevant to the European Union and other countries that have implemented the EU Directive 1999/5/EC.

Contents

Scope

The information in this document is applicable to the Cisco 1000 Series Lightweight Access Points that include AIR-AP1010-E-K9, AIR-AP1020-E-K9 and AIR-AP1030-E-K9.

The dual-band equipment (2.4- and 5- GHz) operates in the 2400- to 2483.5-MHz, the 5150- to 5350-MHz and the 5470- to 5725-MHz frequency range.

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National regulations may require that operations be limited to portions of the frequency ranges identified above or at reduced power levels or both. See the "National Restrictions" section on page 4 for complete details.

Declaration of Conformity with Regard to the EU Directive 1999/5/EC (R&TTE Directive)

Български [Bulgarian]	Това оборудване отговаря на съществените изисквания и приложими клаузи на Директива 1999/5/EC.
Česky [Czech]:	Toto zařízení je v souladu se základními požadavky a ostatními odpovídajícími ustano Směrnice 1999/5/EC.
Dansk [Danish]:	Dette udstyr er i overensstemmelse med de væsentlige krav og andre relevante bestemı Direktiv 1999/5/EF.
Deutsch [German]:	Dieses Gerät entspricht den grundlegenden Anforderungen und den weiteren entsprech Vorgaben der Richtlinie 1999/5/EU.
Eesti [Estonian]:	See seade vastab direktiivi 1999/5/EÜ olulistele nõuetele ja teistele asjakohastele sätet
English:	This equipment is in compliance with the essential requirements and other relevant pro of Directive 1999/5/EC.
Español [Spanish]:	Este equipo cumple con los requisitos esenciales asi como con otras disposiciones de l Directiva 1999/5/CE.
Ελληνική [Greek]:	Αυτός ο εξοπλισμός είναι σε συμμόρφωση με τις ουσιώδεις απαιτήσεις και άλλες σχε διατάξεις της Οδηγίας 1999/5/EC.
Français [French]:	Cet appareil est conforme aux exigences essentielles et aux autres dispositions pertinen la Directive 1999/5/EC.
Íslenska	Þetta tæki er samkvæmt grunnkröfum og öðrum viðeigandi ákvæðum Tilskipunar 1999

Nederlands [Dutch]:	Dit apparaat voldoet aan de essentiele eisen en andere van toepassing zijnde bepalingen van de Richtlijn 1999/5/EC.
Malti [Maltese]:	Dan l-apparat huwa konformi mal-htiġiet essenzjali u l-provedimenti l-ohra rilevanti tad-Direttiva 1999/5/EC.
Magyar [Hungarian]:	Ez a készülék teljesíti az alapvető követelményeket és más 1999/5/EK irányelvben meghatározott vonatkozó rendelkezéseket.
Norsk [Norwegian]:	Dette utstyret er i samsvar med de grunnleggende krav og andre relevante bestemmelser i EU-direktiv 1999/5/EF.
Polski [Polish]:	Urządzenie jest zgodne z ogólnymi wymaganiami oraz szczególnymi warunkami określonymi Dyrektywą UE: 1999/5/EC.
Português [Portuguese]:	Este equipamento está em conformidade com os requisitos essenciais e outras provisões relevantes da Directiva 1999/5/EC.
Română [Romanian]	Acest echipament este in conformitate cu cerintele esentiale si cu alte prevederi relevante ale Directivei 1999/5/EC.
Slovensko [Slovenian]:	Ta naprava je skladna z bistvenimi zahtevami in ostalimi relevantnimi pogoji Direktive 1999/5/EC.
Slovensky [Slovak]:	Toto zariadenie je v zhode so základnými požiadavkami a inými príslušnými nariadeniami direktív: 1999/5/EC.
Suomi [Finnish]:	Tämä laite täyttää direktiivin 1999/5/EY olennaiset vaatimukset ja on siinä asetettujen muiden laitetta koskevien määräysten mukainen.
Svenska [Swedish]:	Denna utrustning är i överensstämmelse med de väsentliga kraven och andra relevanta bestämmelser i Direktiv 1999/5/EC.

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Note The full declaration of conformity for this product can be found in the Declaration of Conformity and Regulatory Information section of the appropriate hardware installation guide, which is available on Cisco.com. See the "Obtaining Documents from Cisco.com" section on page 10.

The following standards were applied during the assessment of the product against the requirements of the Directive 1999/5/EC:

- Radio: EN 301 893 and EN 300 328
- EMC: EN 301 489-1 and EN 301 489-17
- Safety: EN 60950 and EN 50385

Note The 5-GHz equipment employs a Dynamic Frequency Selection (DFS) mechanism which is required for operation in the 5-GHz frequency range.

Note In order to meet the different regulatory power limits as well as the Transmit Power Control (TPC) requirement, the equipment has different user-selectable power levels. Devices should always be configured to the lowest possible power level. See the "Changing Output Power" section on page 7 for instructions on how to change the output power settings.

CE Marking

For the Cisco AIR-AP1010-E-K9, AIR-AP1020-E-K9 and AIR-AP1030-E-K9, the following CE mark and class-2 identifier are affixed to the equipment and its packaging:

National Restrictions

In the majority of the EU and other European Countries, the 2.4- and 5-GHz bands have been made available for the use of wireless LANs. Table 1 provides an overview of the regulatory requirements in general applicable for the 2.4- and 5-GHz bands.

Later in this section you will find an overview of countries in which additional restrictions or requirements or both are applicable.

The requirements for any country may evolve. Cisco recommends that you check with the local authorities for the latest status of their national regulations for both the 2.4- and 5-GHz wireless LANs.

Table 1 Overview of Regulatory Requirements for Wireless LANs

Frequency Band (MHz)	Max Power Level (EIRP) mW (dBm)	Indoor Only	Indoor and Outdoor
2400–2483.5	100 (20)	–	x
5150–5350[1]	200 (23)	x	–
5470–5725[1]	1000 (30)	–	x

1. Dynamic Frequency Selection and Transmit Power Control is required in the 5250 to 5350-MHz and 5470 to 5725-MHz frequency range.

Denmark

In Denmark, the band 5150 - 5350 MHz is also allowed for outdoor usage.

I Danmark må frekvensbåndet 5150 - 5350 også anvendes udendørs.

France

For 2.4 GHz, the output power is restricted to 10 mW EIRP when the product is used outdoors in the band 2454 - 2483,5 MHz. There are no restrictions when used in other parts of the 2,4 GHz band. Check http://www.arcep.fr/ for more details.

Pour la bande 2.4 GHz, la puissance est limitée à 10 mW en p.i.r.e. pour les équipements utilisés en extérieur dans la bande 2454 – 2483.5 MHz. Il n'y a pas de restrictions pour des utilisations dans d'autres parties de la bande 2.4 GHz. Consultez http://www.arcep.fr/ pour de plus amples détails.

Italy

This product meets the National Radio Interface and the requirements specified in the National Frequency Allocation Table for Italy. Unless this wireless LAN product is operating within the boundaries of the owner's property, its use requires a "general authorization." Please check http://www.sviluppoeconomico.gov.it/ for more details.

Questo prodotto è conforme alla specifiche di Interfaccia Radio Nazionali e rispetta il Piano Nazionale di ripartizione delle frequenze in Italia. Se non viene installato all 'interno del proprio fondo, l'utilizzo di prodotti Wireless LAN richiede una "Autorizzazione Generale". Consultare http://www.sviluppoeconomico.gov.it/ per maggiori dettagli.

Latvia

The outdoor usage of the 2.4 GHz band requires an authorization from the Electronic Communications Office. Please check http://www.esd.lv for more details.

2.4 GHz frekvenču joslas izmantošanai ārpus telpām nepieciešama atļauja no Elektronisko sakaru direkcijas. Vairāk informācijas: http://www.esd.lv.

Note Although Norway, Switzerland, Iceland, and Liechtenstein are not EU member states, the EU Directive 1999/5/EC has also been implemented in those countries.

Note The regulatory limits for maximum output power are specified in EIRP. The EIRP level of a device can be calculated by adding the gain of the antenna used (specified in dBi) to the output power available at the connector (specified in dBm).

Antennas

Products with Integral Antennas

AIR-AP1010-E-K9

The AIR-AP1010-E-K9 is a dual-band (2.4 and 5 GHz) access point that has 6 dBi integral antennas which cannot be removed or which are not user accessible. Nevertheless as the regulatory limits are not the same throughout the EU, users may need to adjust the conducted power setting for the radio to meet the EIRP limits applicable in their country or region.

The maximum conducted power settings for each band and for each of the applicable regulatory limits are given in Table 2. See the "National Restrictions" section on page 4 to obtain the applicable regulatory limit in your country.

Table 2 Maximum Allowed Conducted Power Settings to Meet Regulatory Limits for Output Power (EIRP)

Cisco Part Number	Gain (dBi)	Frequency Band (MHz)	Regulatory Limit (EIRP) mW (dBm)	Maximum Power Setting[1,2]	Antenna Description
AIR-AP1010-E-K9 with integral antenna	6	2400 – 2483.5 5150 – 5350 5470 – 5725	100 (20) 200 (23) 1000 (30)	1 (4) 1 1	Integral antenna

1. Maximum power settings refer to the access point power settings on the controller interface. See Table 5 for all possible power settings and corresponding values.
2. The power setting inside the brackets is the power setting to be used for this antenna for use in France when operating outdoors within the 2454 – 2483.5 MHz band.

Products with dedicated antennas

AIR-AP1020-E-K9 and AIR-AP1030-E-K9

The AIR-AP1020-E-K9 and AIR-AP1030-E-K9 are equipped with antenna connectors to allow the use of dedicated antennas (which are external to the equipment) for both the 2.4 GHz and the 5 GHz antennas.

Table 3 lists the 2.4-GHz antennas that can be used by these products while Table 4 lists the 5-GHz antennas that can be used. All antennas where assessed together with the equipment against the requirements of the R&TTE directive.

Depending on the country and the environment of use (indoor versus outdoor), a different regulatory limit might be applicable. It is therefore the responsibility of the end user to select a power level that, together with the antenna, results in an EIRP (radiated power) level that is below the applicable limit.

The maximum power setting for each of the antennas and for each of the applicable regulatory limits are given in Table 3 and Table 4. See the "National Restrictions" section on page 4 to identify the regulatory limit applicable in your country.

Table 3 2.4-GHz Dedicated (External) Antennas and Maximum Allowed Power Settings

Cisco Part Number	Antenna Gain (dBi)	Maximum Power Setting[1,2] (#)	Antenna Description
AIR-ANT4941	2.2	1 (3)	Dipole
AIR-ANT5959	2.0	1 (3)	Diversity omnidirectional
AIR-ANT1728	5.2	1 (4)	Omnidirectional ceiling mount
AIR-ANT2506	5.2	1 (4)	Omnidirectional mast mount
AIR-ANT3213	5.2	1 (4)	Diversity omnidirectional
AIR-ANT1729	6.0	1 (4)	Patch wall mount
AIR-ANT2012	6.5	1 (4)	Diversity patch
AIR-ANT3549	9.0	2 (5)	Hemispherical patch

1. Maximum power settings refer to the access point power settings on the controller interface. See Table 5 for all the possible power settings and corresponding values.
2. The power setting inside the brackets is the power setting to be used for this antenna for use in France when operating outdoors within the 2454 – 2483.5 MHz band.

Table 4 5-GHz Dedicated (external) Antennas and Maximum Allowed Power Settings

Cisco Part Number	Gain (dBi)	Frequency Band (GHz)	Regulatory Limit (EIRP) mW (dBm)	Maximum Power Setting (#)[1]	Antenna Description
AIR-ANT5135D-R	3.5	5150 – 5350 5470 – 5725	200 (23) 1000 (30)	1 1	Dipole
AIR-ANT5160V-R	6	5150 – 5350 5470 – 5725	200 (23) 1000 (30)	1 1	Omnidirectional

1. Maximum power settings refer to the access point power settings on the controller interface. See Table 5 for all the possible power settings and corresponding values.

Operating Frequency

The operating frequency in a wireless LAN is determined by the access point. It is important that the access point is correctly configured to meet the local regulations. "National Restrictions" section on page 4 for the country specific operating frequency ranges.

Changing Output Power

The output power on the 1000 series access points can be only be changed using a Cisco 2600 or 4400 series wireless LAN controller, or the controllers on a Wireless Services Module (WiSM).

Note See the Cisco wireless LAN controller configuration guide for your wireless LAN controller for more details on how to to configure your access point using the web-browser interface.

The access point must be registered with your controller before you can make any configuration changes. Follow these steps to change the access point output power.

Step 1 Open your Internet browser. You must use Microsoft Windows XP (pack 1 or higher) or Windows 2000 (service pack 4 or higher with Internet Explorer 6.0 (service pack 1 or higher).

Step 2 Enter **https://IP address** (where *IP address* is the controller's IP address) in the browser address line and press **Enter**. A user login screen appears.

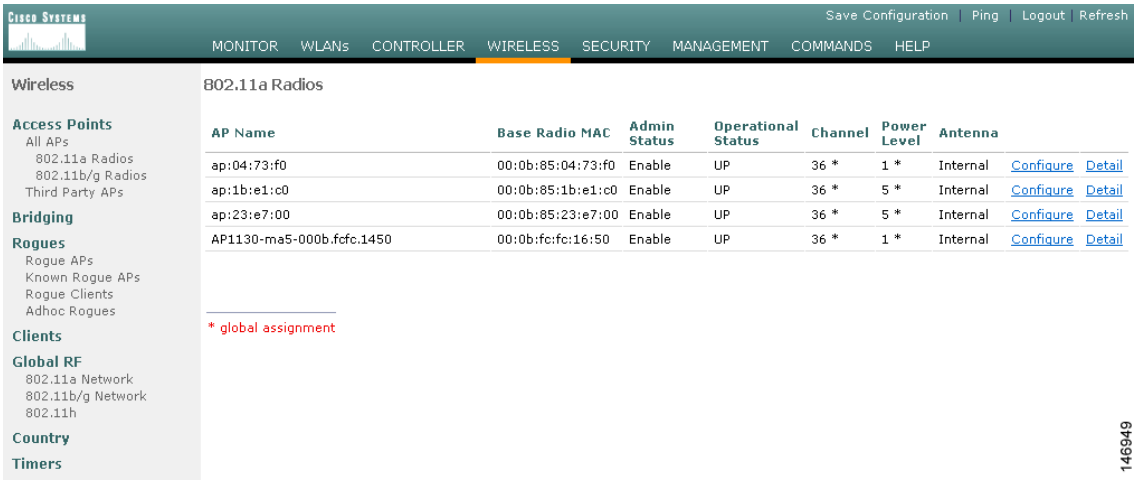
Step 3 Enter the username and password and press **Enter**. The controller's summary page appears.

Note The username and password are case-sensitive.

Step 4 Click **Wireless** to access all the access points.

Step 5 Under Access Points, click either **802.11a Radios** or **802.11b/g Radios** to access the Radios page (see Figure 1).

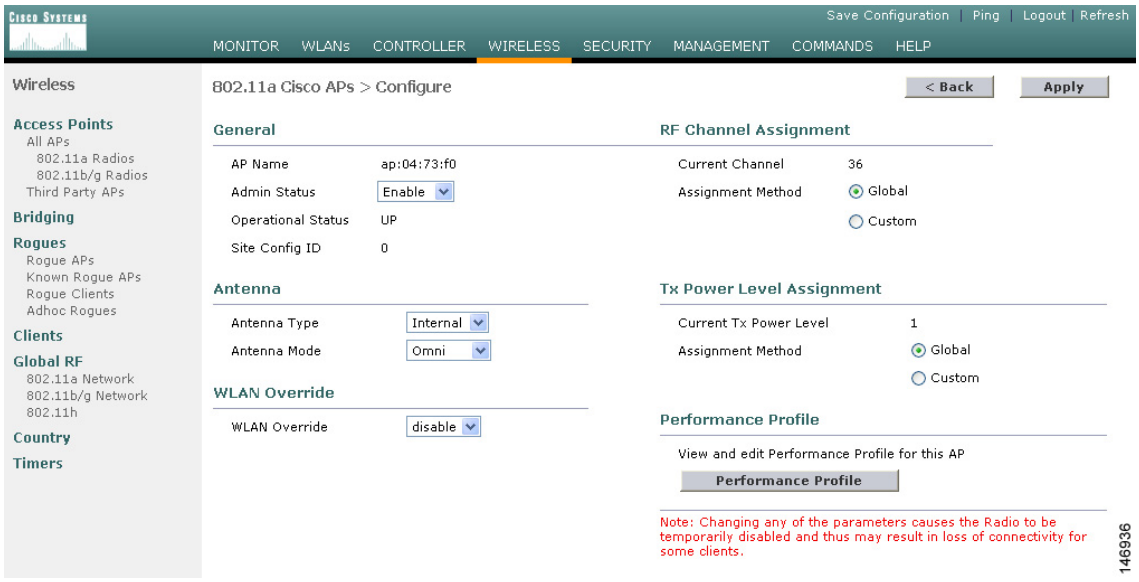
Figure 1 Radios Page



This page shows all the 802.11.a or 802.11b/g access point radios that are joined to the controller.

Step 6 Click **Configure** for the access point for which you want to modify the radio configuration. The Cisco APs > Configure page appears (see Figure 2).

Figure 2 Cisco APs > Configure Page



Step 7 To assign a transmit power level to the access point radio, choose **Custom** for the Assignment Method under Tx Power Level Assignment and choose a transmit power level from the drop-down box (see Table 5).

The drop-down box shows five power level settings. For the EU, only three power level settings exist for the 5-GHz radio and only two for the 2.4-GHz radios. Other settings are equal to the lowest available power level for the respective radio.

The transmit power level is assigned an integer value instead of a value in mW or dBm. Table 5 shows the power levels (in dBm) for each of the settings (1 through 5).

Table 5 Available Output Power Levels

Power Setting #	802.11 b/g 2.4 GHz Mode (dBm)	802.11a 5GHz Mode (dBm)
1	13	17
2	10	14
3	7	11
4	4	8
5	1	5

Step 8 Click **Apply** to commit the changes to the access point radio.

Step 9 Repeat this procedure for each access point radio for which you want to change.

Obtaining Documents from Cisco.com

Follow these steps to obtain any of the online documents mentioned in this document.

Step 1 Browse to http://www.cisco.com.

Step 2 In the Quick Links section, click **Technical Documentation & Support**. A list of categories appears.

Step 3 Click **Product Support**. The Product Support Introduction page appears.

Step 4 Click **Wireless**. The Wireless Products page appears.

Step 5 In the Wireless LAN Access subsection click **Cisco Aironet 1000 Series**. The Cisco Aironet 1000 Series Introduction page appears.

Step 6 Choose the appropriate document.

Note If you still have questions regarding the compliance of these products or you cannot find the information you are looking for, please send an email request to Cisco at complianceinfo@cisco.com