



# EU Directive 1999/5/EC - Compliance Information for the AIR-LAP1500 Series Lightweight IEEE802.11 a/b/g Outdoor Access Points

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July, 2007

This document contains compliance information for Cisco product AIR-LAP1500 Series Lightweight Outdoor Access Point that is relevant to the European Union and other countries that have implemented the EU Directive 1999/5/EC.

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## Scope

The information in this document is applicable to the Cisco 1500 Series Lightweight Outdoor Access Points that currently include the AIR-LAP1510AG-E-K9 and the AIR-LAP1505G-E-K9.

The AIR-LAP1510AG-E-K9 is a dual-band product (2.4- and 5- GHz) that operates in the 2400- to 2483.5-MHz and the 5470- to 5725-MHz frequency range. The AIR-AP1505G-E-K9 operates only in the 2400- to 2483.5-MHz band.



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National regulations may require that operations be limited to portions of the frequency ranges identified above and/or at reduced power levels. 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)

This declaration is only valid for configurations (combinations of software, firmware and hardware) provided and/or supported by Cisco Systems. The use of software or firmware not supported/provided by Cisco Systems may result that the equipment is no longer compliant with the regulatory requirements.

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 ustanoveními Směrnice 1999/5/EC.
Dansk [Danish]:	Dette udstyr er i overensstemmelse med de væsentlige krav og andre relevante bestemmelser i Direktiv 1999/5/EF.
Deutsch [German]:	Dieses Gerät entspricht den grundlegenden Anforderungen und den weiteren entsprechenden Vorgaben der Richtlinie 1999/5/EU.
Eesti [Estonian]:	See seade vastab direktiivi 1999/5/EÜ olulistele nõuetele ja teistele asjakohastele sätetele.
English:	This equipment is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
Español [Spanish]:	Este equipo cumple con los requisitos esenciales así como con otras disposiciones de la Directiva 1999/5/CE.
Ελληνική [Greek]:	Αυτός ο εξοπλισμός είναι σε συμμόρφωση με τις ουσιώδεις απαιτήσεις και άλλες σχετικές διατάξεις της Οδηγίας 1999/5/EC.
Français [French]:	Cet appareil est conforme aux exigences essentielles et aux autres dispositions pertinentes de la Directive 1999/5/EC.
Íslenska [Icelandic]:	Þetta tæki er samkvæmt grunnkröfum og öðrum viðeigandi ákvæðum Tilskipunar 1999/5/EC.
Italiano [Italian]:	Questo apparato é conforme ai requisiti essenziali ed agli altri principi sanciti dalla Direttiva 1999/5/CE.
Latviešu [Latvian]:	Šī iekārta atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]:	Šis įrenginys tenkina 1999/5/EB Direktyvos esminius reikalavimus ir kitas šios direktyvos nuostatas.

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Nederlands [Dutch]:	Dit apparaat voldoet aan de essentiële eisen en andere van toepassing zijnde bepalingen van de Richtlijn 1999/5/EC.
Malti [Maltese]:	Dan l-apparat huwa konformi mal-htigiet essenzjali u l-provedimenti l-oħra 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 Diretiva 1999/5/EC.
Română [Romanian]:	Acest echipament este în conformitate cu cerințele esențiale și 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 Declarations of Conformity and Regulatory Information section of the appropriate product hardware installation guide, which is available on Cisco.com. See the [“Obtaining Documentation, Obtaining Support, and Security Guidelines” section on page 9](#) for instructions for downloading these documents.

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-LAP1510AG-E-K9 and the AIR-LAP1505G-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)	Indoor ONLY	Indoor and Outdoor
2400–2483.5 <sup>3</sup>	100		X
5150–5350 <sup>1,2</sup>	200	X	
5470–5725 <sup>1</sup>	1000		X

1. Dynamic Frequency Selection and Transmit Power Control is required in the 5250- to 5350-MHz and 5470- to 5725-MHz frequency range.
2. As the AIR-LAP1510AG-E-K9 is an outdoor product, the band 5150–5350 MHz is not applicable.
3. The AIR-LAP1505G-E-K9 operates only in the 2400–2483.5 MHz band.

The following sections identify countries having additional requirements or restrictions than those listed in [Table 1](#).

## 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 alle 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). If an attenuator is used, the value of the attenuation (specified in dB) should be subtracted from the total.

## Antennas

The AIR-LAP1510AG-E-K9 and the AIR-LAP1505G-E-K9 are equipped with N-type antenna connectors to allow the use of dedicated antennas (which are external to the equipment).

**Table 2** lists the antennas that can be used by these products. All antennas were assessed together with the equipment against the requirements of the R&TTE directive.

Depending on the country, a different regulatory limit might be applicable. Therefore, it is the responsibility of the user to select a power level that, together with the antenna and attenuator used, results in an effective radiated power (EIRP) level that is below the applicable limit.

The maximum power setting for each of the antennas is listed in [Table 6](#). See the “[National Restrictions](#)” section on [page 4](#) to identify the regulatory limit in your country.

**Table 2** *Dedicated External 2,4-GHz Antennas*

Antenna Part Number	Frequency Band	Antenna Gain (dBi) <sup>1</sup>	Maximum Power Setting (dBm) <sup>2,3</sup>	Minimum Attenuator Attenuation (dB) <sup>4</sup>	Antenna Name
AIR-ANT2455V-14-N	2.4 GHz	5.5	14	none	Omnidirectional
AIR-ANT2480V-N	2.4 GHz	8	11	none	Omnidirectional
AIR-ANT2410Y-R <sup>5</sup>	2.4 GHz	10	11	none	Yagi
AIR-ANT2414S-R <sup>5</sup>	2.4 GHz	14	11	4	Sector

1. The antenna gain mentioned does not include the cable loss. For all combinations, the total of power level, antenna gain, attenuator attenuation and cable loss is equal to or below 20 dBm (eirp).
2. See [Table 6](#) for correctly setting the power level listed.
3. In France, the band 2454–2483.5 MHz shall not be used.
4. The use of the attenuator is required in order to meet the regulatory limits.
5. An RP-TNC (Reversed Polarity TNC) to N adapter is required to use this antenna. Use Pasternack model number PE9730 or equivalent ([www.pasternack.com](http://www.pasternack.com)).

**Table 3** *Dedicated External 5-GHz Antennas (for AIR-LAP1510AG-E-K9 only)*

Antenna Part Number	Frequency Band	Antenna Gain (dBi)	Maximum Power Setting (dBm) <sup>1</sup>	Minimum Attenuator Attenuation (dB) <sup>2</sup>	Antenna Name
AIR-ANT5175V-N	5-GHz	7.5	21	None	Omnidirectional
AIR-ANT5114P-N	5-GHz	14	18	5	Patch
AIR-ANT5117S-N	5-GHz	17	18	8	Sector

1. See [Table 6](#) for correctly setting the power level listed.
2. The use of the attenuator is required in order to meet the regulatory limits.

## Attenuators

Depending on the antenna, Tables x and x may list values for the minimum attenuator attenuation to be used. [Table 4](#) lists the Huber and Suhner part numbers for these attenuators. Other attenuators from different manufacturers but with identical characteristics may be used as well.

**Table 4** Huber & Shuber Attenuators

Huber & Suhner Attenuator P/N	Attenuation (dB)
6804.17.A	4
6805.17.A	5
6808.17.A	8

It is strongly recommended that you use the Huber & Suhner Fast-Wrap weather proofing solution (or equivalent) to protect the attenuators and the coaxial connectors against moisture, corrosion, and other external stresses.

Visit the Huber&Suhner website at <http://www.hubersuhner.com/mozilla/hs-index>.

## Antenna Extension Cables

Table 5 lists the antenna extension cables with N connectors that can be used with the AIR-LAP1510AG-E-K9 and the AIR-LAP1505AG-E-K9.

**Table 5** Antenna Extension Cables

Antenna Cable Part Number	Length (ft)	Maximum Cable Loss (dB)
AIR-CAB005LL-N	5	0.5
AIR-CAB010LL-N	10	1

## Operating Frequency

The operating frequency in a Wireless LAN is determined by the access point. As such, it is important that the access point is correctly configured to meet the local regulations. See the “[National Restrictions](#)” section on page 4 for the country specific operating frequency ranges.

## Changing Output Power

The output power on the AIR-LAP1510AG-E-K9 and AIR-LAP1505-E-K9 access points can be only be changed using a Cisco Wireless LAN 2600 or 4400 Series Controller, or the controllers on a Wireless Services Module (WiSM).



### Note

See the Cisco WLAN 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**

AP Name	Base Radio MAC	Admin Status	Operational Status	Channel	Power Level	Antenna
ap:04:73:f0	00:0b:85:04:73:f0	Enable	UP	36 *	1 *	Internal <a href="#">Configure</a> <a href="#">Detail</a>
ap:1b:e1:c0	00:0b:85:1b:e1:c0	Enable	UP	36 *	5 *	Internal <a href="#">Configure</a> <a href="#">Detail</a>
ap:23:e7:00	00:0b:85:23:e7:00	Enable	UP	36 *	5 *	Internal <a href="#">Configure</a> <a href="#">Detail</a>
AP1130-ma5-000b.fcfc.1450	00:0b:fc:fc:16:50	Enable	UP	36 *	1 *	Internal <a href="#">Configure</a> <a href="#">Detail</a>

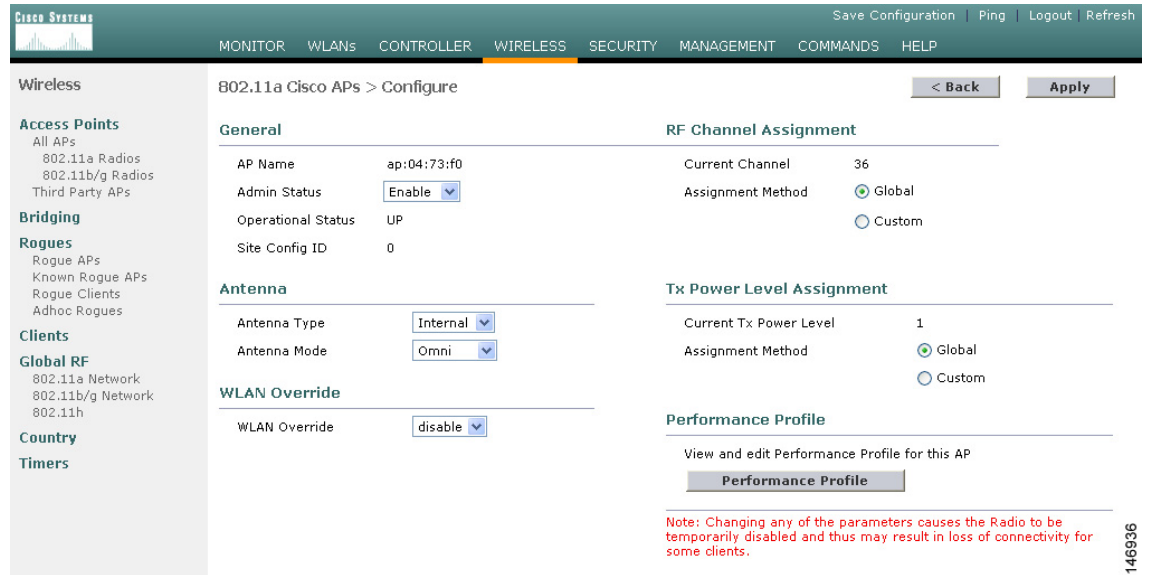
\* global assignment

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](#)).

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**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 6).

The drop-down box shows 5 power level settings. For the EU, only 2 power level settings exist for the 5 GHz and 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 6 shows the power level settings (in dBm) for the access point.

**Table 6 Power Level Settings**

Radio Type	Level 1 (dBm)	Level 2 (dBm)	Level 3 (dBm)	Level 4 (dBm)	Level 5 (dBm)
5 GHz (A)	21	18	18	18	18
2.4 GHz (B/G)	14	11	11	11	11

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

**Step 9** Repeat this procedure for each access point radio output power you want to change.

## Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>





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