



EU Directives 1999/5/EC & 93/42/ECC: Compliance Information for the Cisco Aironet 1250 Series IEEE802.11 a/b/g/n Wireless LAN Products

November, 2007

This document contains compliance information for the Cisco AIR-(L)AP1250 Series Access Points and the AIR-RM125x radio modules that is relevant to the European Union (EU) and other countries that have implemented the EU Directive 1999/5/EC and/or EU Directive 93/42/EC.

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Scope

The information in this document is applicable to the Cisco Aironet 1250 series wireless LAN products that currently includes the AIR-(L)AP1252G-E-K9 2.4 GHz access point, the AIR-(L)AP1252AG-E-K9 dual band (2.4- and 5- GHz) access point, the AIR-RM1252G-E-K9 2.4-GHz radio module, and the AIR-RM1252A-E-K9 5-GHz radio module.

The equipment operates in the 5150- to 5350-MHz and 5470- to 5725-MHz frequency range, and depending on the product configuration, also in the 2400- to 2483.5-MHz frequency range.

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 5](#) for complete details.

Declaration of Conformity with Regard to the EU Directives

This declaration is only valid for configurations (combinations of software, firmware and hardware) supported or provided by Cisco Systems for use within the EU. The use of software or firmware not supported or provided by Cisco Systems may result in the equipment no longer being 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 è 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 Directiva 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.
Slovenský [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 Documents from Cisco.com”](#) 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.

CE Marking

For the Cisco Aironet AIR-(L)AP1252G-E-K9, AIR-(L)AP1252AG-E-K9, AIR-RM1252G-E-K9, or AIR-RM1252A-E-K9, the following CE mark, Notified Body number 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) ¹ (mW)	Indoor ONLY	Indoor and Outdoor
2400–2483.5	100		X
5150–5350 ^{2, 3}	200	X	
5470–5725 ¹	1000		X

1. Effective isotropic radiated power (EIRP).
2. Dynamic Frequency Selection and Transmit Power Control is required in the 5250- to 5350-MHz and 5470- to 5725-MHz frequency range.
3. The AIR-(L)AP1252G-E-K9 and the AIR-RM1252G-E-K9 operate only in 2400 - 2483.5 MHz band.

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 indoors or 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 en intérieur ou 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 operating within the boundaries of the owner's property, the use of this 2.4 GHz Wireless LAN product requires a 'general authorization'. Please check with <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 a 2.4 GHz 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 frekven?u joslas izmantošanai ?rpus telp?m nepieciešama at?auja no Elektronisko sakaru direkcijas. Vair?k inform?cijas: <http://www.esd.lv>.



Note

Although Norway, Switzerland 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

The 1250 series wireless LAN products are equipped with reversed polarity TNC antenna connectors to allow the use of dedicated (external) antennas available from Cisco.

[Table 2](#) list the 2.4 GHz antennas that can be used by the AIR-(L)AP1252AG-E-K9, AIR-(L)AP1252G-E-K9 or AIR-RM1252G-E-K9 while [Table 3](#) list the 5 GHz antennas that can be used by the AIR-(L)AP1252AG-E-K9 or AIR-RM1252A-E-K9. All antennas were assessed together with the equipment against the requirements of the R&TTE directive. The tables also list the maximum power setting for each of the antennas.

Depending on the country 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.

See the “[National Restrictions](#)” section on page 5 to identify the regulatory limit applicable in your country.

Table 2 **2.4-GHz Dedicated (external) Antennas and Maximum Allowed Conducted Power Settings**

Antenna Cisco Part Number	Gain (dBi) ¹	Antenna Gain (dBi)	Maximum Power Setting (dBm) ²	Antenna Description
AIR-ANT4941	2.2	100	17	Articulating Dipole
AIR-ANT2422DG-R	2.2	100	17	Dipole
AIR-ANT5959 ³	2.0	100	17	Diversity ceiling omni
AIR-ANT2430V-R ⁴	3.0	100	15	Omni
AIR-ANT1728	5.2	100	15	Omni
AIR-ANT2506	5.2	100	15	Omni
AIR-ANT3213 ³	5.2	100	15	Diversity omni
AIR-ANT2460P-R	6	100	13	Ceiling mount omni
AIR-ANT2465P-R ³	6.5	100	10	Diversity patch
AIR-ANT2485P-R	8.5	100	10	Patch
AIR-ANT2410Y-R	10	100	7	Yagi

1. The antenna gain mentioned does not include the cable loss. For all combinations, the total of power level, antenna gain and cable loss is equal to or below 20 dBm (eirp).
2. In France, when used outdoors within the 2454 - 2483,5 MHz band, the power setting shall be further reduced by 10 dB to limit the overall eirp to 10 dBm (10 mW).
3. Single enclosure with 2 antenna elements (Diversity).
4. Single enclosure with 3 antenna elements (MIMO).

Table 3 **Dedicated (external) 5 GHz Antennas**

Antenna Cisco Part Number	Gain (dBi)	Maximum Power Setting (dBm)		Antenna Description
		Indoors	Outdoors ¹	
AIR-ANT5135D-R	3.5	17	20	Dipole
AIR-ANT5135DG-R	3.5	17	20	Dipole
AIR-ANT5140V-R ²	4	17	20	Omni
AIR-ANT5145V-R ³	4.5	17	20	Diversity omni
AIR-ANT5160V-R	6	17	20	Omni
AIR-ANT5170P-R2	7	14	20	Diversity patch
AIR-ANT5195P-R	9.5	11	17	Patch

1. Outdoor operation is not allowed within 5150 - 5350 MHz.
2. Single enclosure with 3 antenna elements (MIMO).
3. Single enclosure with 2 antenna elements (Diversity)

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 5](#) for the country specific operating frequency ranges.

Changing Output Power

In case of the AIR-RM1252G-E-K9 or AIR-RM1252A-E-K9 it is assumed that these modules have been mounted in an AIR-AP1250 or AIR-LAP1250 platform.

Autonomous Access Points

To change the output power of autonomous 1250 series access points (AIR-AP1252AG-E-K9, AIR-AP1252G-E-K9, or AIR-AP1250) follow these instructions:

Step 1 Use your web-browser to access your access point.



Note Administrator privileges may be required in order to change access point settings.

Step 2 When the Summary Status page displays, click **Radio0-802.11N^{2GHz}** or **Radio1-802.11N^{5GHz}**.

Step 3 On the radio status page, click **Settings** and the radio settings page displays.

Step 4 Click the desired output power level in the Transmitter Power (Current Power) field.

Step 5 Scroll down to the bottom of the page and click **Apply**.

Step 6 Close your web-browser.

Lightweight Access Points

The output power on the AIR-LAP1252AG-E-K9, AIR-LAP1252G-E-K9, and AIR-LAP1250 access points can only be changed using a Cisco Wireless LAN 2100 or 4400 Series Controller, or the controllers on a Wireless Services Module (WiSM).

See the *Cisco WLAN Controller Configuration Guide* for your Wireless LAN Controller for more details on how to configure your access point using the web-browser interface.



Note

Administrator privileges might be required in order to change controller settings.

The access point must be registered with your controller before you can make any configuration changes.

To change the output power level of the lightweight access points using the 2100 or 4400 series controllers, follow these instructions:

-
- Step 1** Open your Internet browser. You must use Microsoft Internet Explorer 6.0.2800 or a later release.
 - 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 > 802.11a/n Radios** or **802.11b/g/n Radios** and a list of associated access points appears.
- Step 5** Choose the desired access point and click **Configure**. The radio settings page appears.
- Step 6** Scroll down to the Tx Power Level Assignment field, and click **Custom**.
Custom indicates that the radio output power is manually controlled by the Tx Power Configuration setting field.
- Step 7** In the Tx Power Level field, select the appropriate power level setting (1 to 8).
The Tx Power Level setting of 1 represents the maximum conducted power setting for the access point. Each subsequent controller power level (such as 2, 3, 4, etc.) represents approximately a 3-dBm reduction in transmit power from the previous power level.



Note Some lower controller Tx power levels might produce the same output power levels at the access point.

- Step 8** Click **Apply**.
 - Step 9** Close your Internet browser.
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Obtaining Documents from Cisco.com

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

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- Step 1** Browse to this URL on Cisco.com:
<http://www.cisco.com/en/US/products/hw/wireless/>
 - Step 2** For Cisco Aironet 1250 Series Access Point documents, click **Cisco Aironet 1250 Series** under the Access Points.
 - Step 3** For Cisco Wireless LAN Controller documents, click **Cisco 4400 Series Wireless LAN Controllers** or **Cisco 2100 Series Wireless LAN Controllers**.
 - Step 4** The documents are available from the Support box.
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Related Documentation

These documents provide information about the controllers and access points:

- *Cisco WLAN Controller Web Interface User Guide*—describes the Web user interface that is built into each Cisco Wireless LAN Controller.
- *Cisco Wireless LAN Controller Installation and Configuration Guide*—describes installation, configuration, and logging into Cisco Wireless LAN Controllers.
- *Cisco Aironet 1250 Series Access Point Hardware Installation Guide*—describes the access point's hardware installation and specifications.
- *Quick Start Guide: Cisco Aironet 1250 Series Access Point*—provides a product overview and basic instructions for getting a 1250 series access point connected to a wireless LAN.



Note

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

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