EU Directives 1999/5/EC & 93/42/ECC: Compliance Information for the AIR-(L)AP1131AG-E-K9, AIR-(L)AP1232AG-E-K9, AIR-(L)AP1242AG-E-K9, AIR-RM21A-E-K9, and AIR-RM22A-E-K9 Products

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This document contains compliance information for Cisco Aironet products AIR-(L)AP1131AG-E-K9, AIR-(L)AP1232AG-E-K9, AIR-(L)AP1242AG-E-K9, AIR-RM21A-E-K9, and AIR-RM22A-E-K9 that is relevant to the European Union and other countries that have implemented the EU Directive 1999/5/EC and/or EU Directive 93/42/ECC.

Contents

This document contains these sections:

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Scope

The information in this document is applicable to the Cisco Aironet 5-GHz single-band and 2.4- and 5-GHz dual-band wireless LAN products that currently include:

- Single-band (5-GHz): AIR-RM21A-E-K9 and AIR-RM22A-E-K9
- Dual-band (2.4- and 5-GHz): AIR-(L)AP1131AG-E-K9, AIR-(L)AP1232AG-E-K9, and AIR-(L)AP1242AG-E-K9

In addition, any AIR-AP12xx platform (different from the AIR-(L)AP1232AG-E-K9 and AIR-(L)AP1242AG-E-K9, which are already covered by this document) can be equipped with either an AIR-RM21A-E-K9 or AIR-RM22A-E-K9.

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 at reduced power levels or both. See the "National Restrictions" section on page 5 for complete details.

Declaration of Conformity with Regard to the EU Directives

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 asi 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.
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.

Declaration of Conformity with Regard to the EU Directive 93/42/ECC

This device complies with the EMC requirements of the Medical Device Directive 93/42/ECC.

When installed in a medical environment, the equipment shall only be powered using PoE (Power over Ethernet)

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 13 for instructions for downloading these documents.

The following standards were applied during the assessment of the product against the requirements of the Directives 1999/5/EC and 93/42/ECC:

- Radio: EN 301 893 and EN 300 328 (if applicable)
- EMC: EN 301 489-1, EN 301 489-17, and EN 60601-1-2
- 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 various regulatory power limits as well as the Transmit Power Control (TPC) requirement, the equipment has a number of user-selectable power levels. Devices should always be configured to the lowest possible power level. See the "Changing Output Power" section on page 10 for instructions on how to change the output power settings.

CE Marking

For the Cisco Aironet AIR-(L)AP1131AG-E-K9, AIR-(L)AP1232AG-E-K9, AIR-(L)AP1242AG-E-K9, AIR-RM21A-E-K9, or AIR-RM22A-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 that apply to 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 apply.

The requirements for any country may evolve. Cisco recommends that you check with local authorities for the latest status of their national regulations for both 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]	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.

The following sections identify countries having requirements or restrictions in addition to those listed in Table 1.

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 to 2483.5 MHz. There are no restrictions when used indoors or 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 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 this wireless LAN product is operating within the boundaries of the owner's property, its use requires a "general authorization." Please check with *http://www.comunicazioni.it/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.comunicazioni.it/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 (radiated power). 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

The 5-GHz wireless LAN products AIR-RM21A-E-K9 and the dual-band (2.4- and 5-GHz) wireless LAN product AIR-(L)AP1131AG-E-K9 have integrated antennas which cannot be removed or which are not user accessible. Nevertheless, as 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.

AIR-(L)AP1131AG-E-K9

The AIR-(L)AP1131AG-E-K9 is a dual-band (2.4- and 5-GHz) access point. The maximum conducted power settings for each band of the applicable regulatory limits are given in Table 2. See the "National Restrictions" section on page 5 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)	Maximum Conducted Power Setting (dBm)	Antenna Description
AIR-(L)AP1131AG-E-K9 with integral antenna	4	2400–2454	100	14	Integral antenna
		2454–2483.5[1]	10	5	
		5150–5350	200	17	
		5470–5725	1000	17	

1. Restriction to 10 mW applicable only for outdoor usage in France. For indoor usage, the limit is 100 mW EIRP.

AIR-RM21A-E-K9

The AIR-RM21A-E-K9 is a 5 GHz 802.11a radio module that incorporates an articulating antenna paddle that contains both omnidirectional and patch antennas. Whether the antenna performs as an omnidirectional antenna (such as ceiling or desktop mounting) or as a directional antenna (such as wall mounting) is defined by the installation. The maximum conducted power setting for both cases and for each of the applicable regulatory limits is given in Table 3.

See the "National Restrictions" section on page 5 to obtain the applicable regulatory limit in your country.

Table 3 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)	Maximum Conducted Power Setting (dBm)	Antenna Description
AIR-RM21A-E-K9 with integral antenna	5	5150–5350	200	17	Intregral antenna performing as an omni-directional antenna (ceiling and desktop)
		5470–5725	1000	17	
	9	5150–5350	200	14	Intregral antenna performing as a directional antenna (wall mounting)
		5470–5725	1000	17	

Products with Dedicated Antennas

AIR-(L)AP1232AG-E-K9, AIR-(L)AP1242AG-E-K9, and AIR-RM22A-E-K9

The AIR-(L)AP1232AG-E-K9 and the AIR-(L)AP1242AG-E-K9 are dual-band (2.4- and 5-GHz) products, but the AIR-RM22A-E-K9 is a 5-GHz only product. These products can be equipped with dedicated antennas which are external to the equipment.

Table 4 lists the 2.4-GHz antennas that can be used by the AIR-(L)AP1232AG-E-K9 or the AIR-(L)AP1232AG-E-K9. Table 5 lists the 5-GHz antennas that can be used by the AIR-(L)AP1232AG-E-K9, the AIR-(L)AP1242AG-E-K9, and the AIR-RM22A-E-K9. All antennas were assessed together with the equipment according to 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 conducted power setting for each of the antennas and for each of the applicable regulatory limits are given in Table 4 and Table 5. See the "National Restrictions" section on page 5 to identify the regulatory limit applicable in your country.

Table 4 2.4-GHz Dedicated (external) Antennas and Maximum Allowed Conducted Power Settings

Antenna Cisco Part Number	Gain (dBi)	Frequency Band (MHz)	Regulatory Limit (EIRP) (mW)	Maximum Conducted Power Setting (dBm) (see note[1])	Antenna Description
AIR-ANT4941	2.2	2400–2483.5	100	17	Dipole
AIR-ANT3351	2.2	2400–2483.5	100	17	POS diversity dipole
AIR-ANT5959	2.2	2400–2483.5	100	17	Diversity omni
AIR-ANT1728	5.2	2400–2483.5	100	15	Ceiling mounted omni
AIR-ANT2506	5.2	2400–2483.5	100	15	Mast mounted omni
AIR-ANT3213	5.2	2400–2483.5	100	15	Diversity omni
AIR-ANT1729	6	2400–2483.5	100	15	Wall mounted patch
AIR-ANT2012	6.5	2400–2483.5	100	13	Diversity patch
AIR-ANT3549	8.5	2400–2483.5	100	10	Hemispherical patch
AIR-ANT2410Y-R	10	2400–2483.5	100	10	Yagi
AIR-ANT1949[2]	13	2400–2483.5	100	7	Yagi
AIR-ANT24120[2]	12	2400–2483.5	100	7	Omni
AIR-ANT2414S-R[2]	14	2400–2483.5	100	7	Sector
AIR-ANT3338[2]	21	2400–2483.5	100	0	Solid dish

1. Conducted power settings need to be further reduced by 10 dB when operating outdoors in France within the band 2454 to 2483.5 MHz.
2. These antennas cannot be used outdoors in France within the band 2454 to 2483.5 MHz.

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

Antenna Cisco Part Number	Gain (dBi)	Frequency Band (MHz)	Regulatory Limit (EIRP) (mW)	Maximum Conducted Power Setting (dBm)	Antenna Description
AIR-ANT5135-D-R	4	5150–5350	200	17	Dipole
		5470–5725	1000	17	
AIR-ANT5145V-R	4.5	5150–5350	200	17	Diversity omni
		5470–5725	1000	17	
AIR-ANT5160V-R	6	5150–5350	200	17	Omni
		5470–5725	1000	17	
AIR-ANT5170P-R	7	5150–5350	200	14	Diversity patch
		5470–5725	1000	17	
AIR-ANT5195P-R	9.5	5150–5350	200	11	Patch
		5470–5725	1000	17	

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 of specific operating ranges.

Changing Output Power

For the products AIR-RM21A-E-K9 or AIR-RM22-E-K9, it is assumed that these modules have been mounted in an AIR-AP1200 series access point.

AIR-AP1131AG-E-K9, AIR-AP1232AG-E-K9, and AIR-AP1242AG-E-K9

Connect your PC to the AIR-AP1200 series, AIR-AP1131AG-E-K9, or AIR-AP1242AG-E-K9 access point's Ethernet port and follow these steps to change the output power to meet the local regulations.

Step 1 Open your Internet browser. You must use Microsoft Internet Explorer 5.x or later or Netscape Navigator 4.x or later.

Step 2 Enter the access point's IP address in the browser address line and press **Enter**. An Enter Network Password screen appears.

Step 3 Enter the username and password and press **Enter**. The Summary Status page appears.

Note The default username and password are both *Cisco*. They are case-sensitive.

Step 4 In the Network Interfaces section, select the radio you want to change. The status page for that radio appears.

Step 5 Select the **Settings** tab. The Settings page appears.

Step 6 Scroll down to the Transmitter Power section.

Step 7 Select the appropriate power level. Table 6 lists the output power levels (conducted) for the 2.4-GHz and 5-GHz bands.

Table 6 Available Output Power Levels

802.11b/g 2.4-GHz Radio (dBm)	802.11a 5-GHz Radio (dBm)
14	17
11	15
8	14
5	11
2	8
-1	5
	2
	-1

Step 8 Click **Apply**.

Step 9 Close the browser if desired.

Note See the hardware installation guide or the quick start guide for your product for more details on how to connect your PC to the access point and on how to configure your access point using the web-browser interface.

AIR-LAP1131AG-E-K9, AIR-LAP1232AG-E-K9, and AIR-LAP1242AG-E-K9

The output power on the AIR-LAP1131AG-E-K9, the AIR-LAP1132AG-E-K9, or the AIR-LAP1242AG-E-K9 access points can be changed only using a Cisco Wireless LAN Controller (2600 series or 4400 series) or the controllers on a Wireless Services Module (WiSM).

Note See the Cisco WLAN Controller Web Interface user guide for your Cisco Wireless LAN Controller for more details on how to to configure your access point using the web-browser interface.

Follow these steps to change the AIR-LAP1131AG-E-K9, the AIR-LAP1232AG-E-K9, or the AIR-LAP1242AG-E-K9 access point's output power to meet local regulations:

Step 1 Connect your access point to the Ethernet network to register with your controller.

Step 2 Open your Internet browser. You must use Microsoft Internet Explorer 6.0.2800 or later.

Step 3 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 4 Enter the username and password and press **Enter**. The controller's summary page appears.

Note The username and password are case-sensitive.

Step 5 Click **Wireless > Access Point > 802.11a Radios** or **802.11b/g Radios > Cisco APs > Configure**. The radio settings page appears.

Step 6 Scroll down to the Tx Power Level Assignment field, and select **Global** or **Custom**.

- **Global**—indicates that the radio output power is globally controlled by settings in the controller's global RF parameters section.
- **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).

Based on the configured antenna gain, the configured channel, and the configured power level, the actual transmit power at the access point can be reduced so that the specific country regulations are not exceeded. Table 7 lists the Cisco Wireless LAN Controller power settings and the output power levels for the 2.4-GHz and 5-GHz bands.

Table 7 Available Output Power Levels

Cisco Wireless LAN Controller Tx Power Settings[1]	802.11b/g 2.4-GHz Radio (dBm)	802.11a 5-GHz Radio (dBm)
1 (maximum)	14	17
2	11	14
3	8	11
4	5	8
5	2	5
6	-1	2
7	n/a	-1
8	n/a	n/a

1. The Tx Power Level setting of 1 represents the maximum conducted power setting for the access point. Each subsequent power level (such as 2, 3, 4, etc) represents approximately a 3-dBm reduction in transmit power from the previous power level.

Step 8 Close your Internet browser.

Obtaining Documents from Cisco.com

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

Step 1 Browse to this URL: http://www.cisco.com/en/US/products/hw/wireless/tsd_products_support_category_home.html.

Step 2 For Cisco Aironet access point documents, click **Cisco Aironet 1130AG Series**, **Cisco Aironet 1200 Series**, or **Cisco Aironet 1240AG Series** in the Wireless LAN Access section.

Step 3 For Cisco Wireless LAN Controller documents, click **Cisco 4400 Series Wireless LAN Controllers** or **Cisco 2000 Series Wireless LAN Controllers**.

Step 4 Select the appropriate document.

Note The AIR-RM21/22 radio modules are covered in the Cisco Aironet 1200 series documents.

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 to Cisco at *complianceinfo@cisco.com*

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 lightweight access point hardware installation guides—describe the access point's hardware installation and specifications.

This document is to be used in conjunction with the documents listed in the "Related Documentation" section.